

# Miguel A A Munoz

## List of Publications by Citations

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147  
papers

5,352  
citations

37  
h-index

69  
g-index

155  
ext. papers

6,158  
ext. citations

4.1  
avg, IF

6.15  
L-index

#	Paper	IF	Citations
147	Scale-free networks from varying vertex intrinsic fitness. <i>Physical Review Letters</i> , <b>2002</b> , 89, 258702	7.4	514
146	Detecting network communities: a new systematic and efficient algorithm. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2004</b> , 2004, P10012	1.9	270
145	Entangled networks, synchronization, and optimal network topology. <i>Physical Review Letters</i> , <b>2005</b> , 95, 188701	7.4	262
144	Paths to self-organized criticality. <i>Brazilian Journal of Physics</i> , <b>2000</b> , 30, 27-41	1.2	213
143	Griffiths phases and the stretching of criticality in brain networks. <i>Nature Communications</i> , <b>2013</b> , 4, 2521	7.4	199
142	Colloquium: Criticality and dynamical scaling in living systems. <i>Reviews of Modern Physics</i> , <b>2018</b> , 90,	40.5	195
141	Nonlinear q-voter model. <i>Physical Review E</i> , <b>2009</b> , 80, 041129	2.4	141
140	Avalanche and spreading exponents in systems with absorbing states. <i>Physical Review E</i> , <b>1999</b> , 59, 6175-9	2.4	141
139	Absorbing-state phase transitions in fixed-energy sandpiles. <i>Physical Review E</i> , <b>2000</b> , 62, 4564-82	2.4	138
138	Driving, Conservation, and Absorbing States in Sandpiles. <i>Physical Review Letters</i> , <b>1998</b> , 81, 5676-5679	7.4	135
137	Information-based fitness and the emergence of criticality in living systems. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2014</b> , 111, 10095-100	11.5	108
136	Griffiths phases on complex networks. <i>Physical Review Letters</i> , <b>2010</b> , 105, 128701	7.4	101
135	Entropic origin of disassortativity in complex networks. <i>Physical Review Letters</i> , <b>2010</b> , 104, 108702	7.4	98
134	Integration of Langevin equations with multiplicative noise and the viability of field theories for absorbing phase transitions. <i>Physical Review Letters</i> , <b>2005</b> , 94, 100601	7.4	96
133	Langevin description of critical phenomena with two symmetric absorbing states. <i>Physical Review Letters</i> , <b>2005</b> , 94, 230601	7.4	85
132	Critical behavior of systems with many absorbing states. <i>Physical Review Letters</i> , <b>1996</b> , 76, 451-454	7.4	77
131	Trophic coherence determines food-web stability. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2014</b> , 111, 17923-8	11.5	76

130	Optimal network topologies: expanders, cages, Ramanujan graphs, entangled networks and all that. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2006</b> , 2006, P08007-P08007	1.9	76
129	Self-organization without conservation: are neuronal avalanches generically critical?. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2010</b> , 2010, P02015	1.9	73
128	Landau-Ginzburg theory of cortex dynamics: Scale-free avalanches emerge at the edge of synchronization. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2018</b> , 115, E1356-E1365	11.5	72
127	Eluding catastrophic shifts. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2015</b> , 112, E1828-36	11.5	71
126	Systems with Multiplicative Noise: Critical Behavior from KPZ Equation and Numerics. <i>Physical Review Letters</i> , <b>1997</b> , 78, 274-277	7.4	71
125	Nonperturbative fixed point in a nonequilibrium phase transition. <i>Physical Review Letters</i> , <b>2005</b> , 95, 100601	7.4	68
124	Phase structure of systems with multiplicative noise. <i>Physical Review Letters</i> , <b>1996</b> , 76, 4376-4379	7.4	68
123	Entropy estimates of small data sets. <i>Journal of Physics A: Mathematical and Theoretical</i> , <b>2008</b> , 41, 202001	7.4	65
122	Critical behavior of a one-dimensional fixed-energy stochastic sandpile. <i>Physical Review E</i> , <b>2001</b> , 64, 056104	7.4	65
121	Self-organization without conservation: true or just apparent scale-invariance?. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2009</b> , 2009, P09009	1.9	63
120	Factors determining nestedness in complex networks. <i>PLoS ONE</i> , <b>2013</b> , 8, e74025	3.7	57
119	A novel brain partition highlights the modular skeleton shared by structure and function. <i>Scientific Reports</i> , <b>2015</b> , 5, 10532	4.9	55
118	Disordered one-dimensional contact process. <i>Physical Review E</i> , <b>1998</b> , 57, 5060-5068	2.4	54
117	Influence of topology on the performance of a neural network. <i>Neurocomputing</i> , <b>2004</b> , 58-60, 229-234	5.4	53
116	Frustrated hierarchical synchronization and emergent complexity in the human connectome network. <i>Scientific Reports</i> , <b>2014</b> , 4, 5990	4.9	48
115	Temporal Griffiths phases. <i>Physical Review Letters</i> , <b>2011</b> , 106, 235702	7.4	44
114	Nature of different types of absorbing states. <i>Physical Review E</i> , <b>1998</b> , 57, 1377-1383	2.4	43
113	Ranking species in mutualistic networks. <i>Scientific Reports</i> , <b>2015</b> , 5, 8182	4.9	38

112	Survival probability and field theory in systems with absorbing states. <i>Physical Review E</i> , <b>1997</b> , 56, 5101-5105	5.1	37
111	On nonlinear diffusion with multiplicative noise. <i>Europhysics Letters</i> , <b>1998</b> , 41, 147-152	1.6	37
110	Phase Structure of Systems with Infinite Numbers of Absorbing States. <i>Journal of Statistical Physics</i> , <b>1998</b> , 91, 541-569	1.5	35
109	Neutral Theory and Scale-Free Neural Dynamics. <i>Physical Review X</i> , <b>2017</b> , 7,	9.1	34
108	Stochastic theory of synchronization transitions in extended systems. <i>Physical Review Letters</i> , <b>2003</b> , 90, 204101	7.4	34
107	Quenched disorder forbids discontinuous transitions in nonequilibrium low-dimensional systems. <i>Physical Review E</i> , <b>2014</b> , 89, 012145	2.4	33
106	Rare-region effects in the contact process on networks. <i>Physical Review E</i> , <b>2012</b> , 85, 066125	2.4	33
105	Simple unified view of branching process statistics: Random walks in balanced logarithmic potentials. <i>Physical Review E</i> , <b>2017</b> , 95, 032115	2.4	29
104	Self-Organized Bistability Associated with First-Order Phase Transitions. <i>Physical Review Letters</i> , <b>2016</b> , 116, 240601	7.4	29
103	Patchiness and Demographic Noise in Three Ecological Examples. <i>Journal of Statistical Physics</i> , <b>2012</b> , 148, 724-740	1.5	28
102	Confirming and extending the hypothesis of universality in sandpiles. <i>Physical Review E</i> , <b>2008</b> , 78, 041102	2.4	28
101	Mean-field limit of systems with multiplicative noise. <i>Physical Review E</i> , <b>2005</b> , 72, 056102	2.4	28
100	Recent results on multiplicative noise. <i>Physical Review E</i> , <b>1999</b> , 60, 69-78	2.4	28
99	Bet-hedging strategies in expanding populations. <i>PLoS Computational Biology</i> , <b>2019</b> , 15, e1006529	5	27
98	Nonequilibrium wetting transitions with short range forces. <i>Physical Review E</i> , <b>2003</b> , 67, 021607	2.4	27
97	High dimensional behavior of the Kardar-Parisi-Zhang growth dynamics. <i>Physical Review E</i> , <b>1998</b> , 58, R5209-R5212	2.4	27
96	Is the particle current a relevant feature in driven lattice gases?. <i>Physical Review Letters</i> , <b>2001</b> , 87, 195702	2.4	26
95	Numerical study of the Langevin theory for fixed-energy sandpiles. <i>Physical Review E</i> , <b>2004</b> , 69, 045105	2.4	25

94	Numerical study of persistence in models with absorbing states. <i>Physical Review E</i> , <b>2001</b> , 63, 031104	2.4	25
93	Nonequilibrium transitions induced by multiplicative noise. <i>Physical Review E</i> , <b>1998</b> , 57, R2495-R2498	2.4	25
92	Universality classes of driven lattice gases. <i>Physical Review E</i> , <b>2000</b> , 61, R4683-6	2.4	23
91	Short-term synaptic plasticity in the deterministic Tsodyks-Markram model leads to unpredictable network dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2013</b> , 110, 16610-5	11.5	22
90	Interface scaling in the contact process. <i>Physical Review E</i> , <b>2000</b> , 62, 7632-7	2.4	22
89	Impact of environmental colored noise in single-species population dynamics. <i>Physical Review E</i> , <b>2017</b> , 96, 042301	2.4	21
88	Improved spectral algorithm for the detection of network communities. <i>AIP Conference Proceedings</i> , <b>2005</b> ,	0	21
87	Stochastic amplification of fluctuations in cortical up-states. <i>PLoS ONE</i> , <b>2012</b> , 7, e40710	3.7	20
86	Infinite numbers of absorbing states: Critical behavior. <i>Physica D: Nonlinear Phenomena</i> , <b>1997</b> , 103, 485-490	2.4	20
85	Interface depinning versus absorbing-state phase transitions. <i>Physical Review E</i> , <b>2002</b> , 65, 026145	2.4	20
84	Stochastic theory of non-equilibrium wetting. <i>Europhysics Letters</i> , <b>2002</b> , 57, 803-809	1.6	20
83	Langevin equation for driven diffusive systems. <i>Physical Review E</i> , <b>1998</b> , 57, 752-755	2.4	20
82	Scale invariant dynamics of surface growth. <i>Physical Review E</i> , <b>1999</b> , 59, 6460-75	2.4	20
81	Generic two-phase coexistence in nonequilibrium systems. <i>European Physical Journal B</i> , <b>2005</b> , 43, 73-79	1.2	19
80	Numerical analysis of a Langevin equation for systems with infinite absorbing states. <i>Physical Review E</i> , <b>1997</b> , 56, 4864-4867	2.4	18
79	Absorbing states and elastic interfaces in random media: two equivalent descriptions of self-organized criticality. <i>Physical Review Letters</i> , <b>2007</b> , 98, 155702	7.4	18
78	Quasi-neutral theory of epidemic outbreaks. <i>PLoS ONE</i> , <b>2011</b> , 6, e21946	3.7	18
77	Langevin Equations for Reaction-Diffusion Processes. <i>Physical Review Letters</i> , <b>2016</b> , 117, 100601	7.4	17

76	Environmental unpredictability and inbreeding depression select for mixed dispersal syndromes. <i>BMC Evolutionary Biology</i> , <b>2016</b> , 16, 71	3	17
75	What ecological factors shape species-area curves in neutral models?. <i>PLoS ONE</i> , <b>2012</b> , 7, e38232	3.7	16
74	How to discriminate easily between directed-percolation and Manna scaling. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>2007</b> , 384, 89-93	3.3	16
73	Stochastic Spatial Models in Ecology: A Statistical Physics Approach. <i>Journal of Statistical Physics</i> , <b>2018</b> , 172, 44-73	1.5	16
72	Time-series thresholding and the definition of avalanche size. <i>Physical Review E</i> , <b>2019</b> , 100, 012133	2.4	15
71	Directed surfaces in disordered media. <i>Physical Review Letters</i> , <b>1996</b> , 76, 1481-1484	7.4	15
70	Inherent directionality explains the lack of feedback loops in empirical networks. <i>Scientific Reports</i> , <b>2014</b> , 4, 7497	4.9	14
69	The effect of quenched disorder in neutral theories. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2013</b> , 2013, P04032	1.9	14
68	Dynamical phase coexistence: a simple solution to the "savanna problem". <i>Journal of Theoretical Biology</i> , <b>2010</b> , 264, 360-6	2.3	14
67	Network synchronization: optimal and pessimal scale-free topologies. <i>Journal of Physics A: Mathematical and Theoretical</i> , <b>2008</b> , 41, 224008	2	14
66	Simplified Langevin approach to the Peyrard-Bishop-Dauxois model of DNA. <i>Physical Review E</i> , <b>2008</b> , 77, 032901	2.4	14
65	Mesoscopic description of the annealed Ising model, and multiplicative noise. <i>Physical Review E</i> , <b>1998</b> , 58, 6828-6831	2.4	14
64	Hierarchical model of slow constrained dynamics. <i>Physical Review E</i> , <b>1998</b> , 57, 4354-4360	2.4	14
63	Spontaneously broken neutral symmetry in an ecological system. <i>Physical Review Letters</i> , <b>2012</b> , 109, 038102	1.2	13
62	Crystallization and melting of bacteria colonies and Brownian bugs. <i>Physical Review E</i> , <b>2008</b> , 77, 021102	2.4	13
61	Temporally disordered Ising models. <i>Europhysics Letters</i> , <b>2001</b> , 56, 485-491	1.6	12
60	Feedback Mechanisms for Self-Organization to the Edge of a Phase Transition. <i>Frontiers in Physics</i> , <b>2020</b> , 8,	3.9	12
59	Sticky grains do not change the universality class of isotropic sandpiles. <i>Physical Review E</i> , <b>2006</b> , 74, 050102	1.2	11

58	Stochasticity enhances the gaining of bet-hedging strategies in contact-process-like dynamics. <i>Physical Review E</i> , <b>2015</b> , 91, 032114	2.4	10
57	Temporal disorder in up-down symmetric systems. <i>Physical Review E</i> , <b>2012</b> , 85, 051125	2.4	10
56	Entropic contributions in Langevin equations for anisotropic driven systems. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>2001</b> , 296, 364-374	3.3	10
55	Self-organized bistability and its possible relevance for brain dynamics. <i>Physical Review Research</i> , <b>2020</b> , 2,	3.9	10
54	Eco-evolutionary Model of Rapid Phenotypic Diversification in Species-Rich Communities. <i>PLoS Computational Biology</i> , <b>2016</b> , 12, e1005139	5	10
53	Critical behavior of a bounded Kardar-Parisi-Zhang equation. <i>Brazilian Journal of Physics</i> , <b>2003</b> , 33, 443-449	4.9	10
52	Fokker-Planck equation for nonequilibrium competing dynamic models. <i>Physical Review E</i> , <b>1994</b> , 50, 2458-2466	5.9	9
51	Burstiness in activity-driven networks and the epidemic threshold. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2019</b> , 2019, 053502	1.9	8
50	Topological dimension tunes activity patterns in hierarchical modular networks. <i>New Journal of Physics</i> , <b>2017</b> , 19, 113011	2.9	8
49	Field theory of self-organized fractal etching. <i>Physical Review E</i> , <b>2001</b> , 64, 016108	2.4	8
48	Sandpiles and absorbing-state phase transitions: Recent results and open problems. <i>AIP Conference Proceedings</i> , <b>2001</b> ,	0	8
47	Non-normality, reactivity, and intrinsic stochasticity in neural dynamics: a non-equilibrium potential approach. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2018</b> , 2018, 073402	1.9	7
46	Cusps, self-organization, and absorbing states. <i>Physical Review E</i> , <b>2009</b> , 79, 050106	2.4	7
45	Simple nonequilibrium extension of the Ising model. <i>Physical Review E</i> , <b>1996</b> , 54, 4838-4843	2.4	7
44	Intrinsic noise and deviations from criticality in Boolean gene-regulatory networks. <i>Scientific Reports</i> , <b>2016</b> , 6, 34743	4.9	6
43	Rounding of abrupt phase transitions in brain networks. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2015</b> , 2015, P01003	1.9	6
42	Renormalisation group determination of the order of the DNA denaturation transition. <i>Europhysics Letters</i> , <b>2010</b> , 89, 40011	1.6	6
41	A non-order parameter Langevin equation for a bounded Kardar-Parisi-Zhang universality class. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2005</b> , 2005, P10013-P10013	1.9	6

40	Renormalized field theory of driven lattice gases under infinitely fast drive. <i>Physical Review E</i> , <b>2000</b> , 61, 1161-3	2.4	6
39	Ballistic random walker. <i>Physical Review E</i> , <b>1996</b> , 54, 968-971	2.4	6
38	Coexistence in neutral theories: interplay of criticality and mild local preferences. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2015</b> , 2015, P01030	1.9	6
37	Intervality and coherence in complex networks. <i>Chaos</i> , <b>2016</b> , 26, 065308	3.3	6
36	Cooperation, competition and the emergence of criticality in communities of adaptive systems. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2016</b> , 2016, 033203	1.9	6
35	Critical wetting of a class of nonequilibrium interfaces: a mean-field picture. <i>Physical Review E</i> , <b>2007</b> , 75, 031105	2.4	5
34	Mean-field solution of the parity-conserving kinetic phase transition in one dimension. <i>European Physical Journal B</i> , <b>2003</b> , 35, 505-511	1.2	5
33	Effects of static and dynamic disorder on the performance of neural automata. <i>Biophysical Chemistry</i> , <b>2005</b> , 115, 285-8	3.5	5
32	Generalized dielectric breakdown model. <i>Physical Review B</i> , <b>1999</b> , 60, 786-790	3.3	5
31	Continuum Description for Nonequilibrium Competing Dynamic Models. <i>Physical Review Letters</i> , <b>1995</b> , 75, 1875-1878	7.4	5
30	Complex Synchronization Patterns in the Human Connectome Network. <i>Springer Proceedings in Complexity</i> , <b>2016</b> , 69-80	0.3	5
29	Hybrid-type synchronization transitions: Where incipient oscillations, scale-free avalanches, and bistability live together. <i>Physical Review Research</i> , <b>2021</b> , 3,	3.9	4
28	Immune amnesia induced by measles and its effects on concurrent epidemics. <i>Journal of the Royal Society Interface</i> , <b>2021</b> , 18, 20210153	4.1	3
27	Limited role of spatial self-structuring in emergent trade-offs during pathogen evolution. <i>Scientific Reports</i> , <b>2018</b> , 8, 12476	4.9	3
26	Interfacial depinning transitions in disordered media: revisiting an old puzzle. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2014</b> , 2014, P10024	1.9	2
25	Editorial for the research topic: information-based methods for neuroimaging: analyzing structure, function and dynamics. <i>Frontiers in Neuroinformatics</i> , <b>2014</b> , 8, 86	3.9	2
24	Griffiths phases in the contact process on complex networks <b>2011</b> ,		2
23	Critical wetting of a class of nonequilibrium interfaces: a computer simulation study. <i>Physical Review E</i> , <b>2008</b> , 77, 011116	2.4	2



22	Boundary-induced heterogeneous absorbing states <b>2009</b> ,		2
21	Kardar-Parisi-Zhang interfaces bounded by long-ranged potentials. <i>Physical Review E</i> , <b>2006</b> , 74, 011121	2.4	2
20	A test for two Fokker-Planck modellings of a master equation. <i>Journal of Physics A</i> , <b>1995</b> , 28, 2637-2646		2
19	On the influence of microscopic dynamics in non-equilibrium stationary states: a mean field example. <i>Journal of Physics A</i> , <b>1993</b> , 26, 3909-3919		2
18	Classes of critical avalanche dynamics in complex networks. <i>Physical Review Research</i> , <b>2020</b> , 2,	3.9	2
17	Optimal Input Representation in Neural Systems at the Edge of Chaos. <i>Biology</i> , <b>2021</b> , 10,	4.9	2
16	Synchronization in Network Structures: Entangled Topology as Optimal Architecture for Network Design. <i>Lecture Notes in Computer Science</i> , <b>2006</b> , 1075-1082	0.9	2
15	Jensen's force and the statistical mechanics of cortical asynchronous states. <i>Scientific Reports</i> , <b>2019</b> , 9, 15183	4.9	1
14	Does the phenomenon of stochastic amplification of fluctuations play a relevant role in cortical dynamics? <b>2013</b> ,		1
13	Simplest nonequilibrium phase transition into an absorbing state. <i>Physical Review E</i> , <b>2009</b> , 79, 041130	2.4	1
12	Absorbing state phase transitions with a non-accessible vacuum. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , <b>2006</b> , 2006, P12007-P12007	1.9	1
11	Chemical etching of a disordered solid: From experiments to field theory. <i>Physica A: Statistical Mechanics and Its Applications</i> , <b>2005</b> , 357, 122-128	3.3	1
10	Systems with superabsorbing states. <i>Physical Review E</i> , <b>2000</b> , 62, 4633-41	2.4	1
9	Phase separation in systems with absorbing states. <i>Europhysics Letters</i> , <b>1998</b> , 43, 552-557	1.6	1
8	Renormalization-group study of one-dimensional systems with roughening transitions. <i>Physical Review E</i> , <b>1999</b> , 60, 3719-26	2.4	1
7	Anomalous Lifshitz dimension in hierarchical networks of brain connectivity. <i>Physical Review Research</i> , <b>2020</b> , 2,	3.9	1
6	Intermittent percolation and the scale-free distribution of vegetation clusters. <i>New Journal of Physics</i> , <b>2020</b> , 22, 083014	2.9	1
5	Evolution in the Debian GNU/Linux software network: analogies and differences with gene regulatory networks. <i>Journal of the Royal Society Interface</i> , <b>2020</b> , 17, 20190845	4.1	0

4	Phenotypic-dependent variability and the emergence of tolerance in bacterial populations. <i>PLoS Computational Biology</i> , <b>2021</b> , 17, e1009417	5	○
3	Persistence of hierarchical network organization and emergent topologies in models of functional connectivity. <i>Neurocomputing</i> , <b>2021</b> , 461, 743-750	5.4	○
2	Small variation in dynamic functional connectivity in cerebellar networks. <i>Neurocomputing</i> , <b>2021</b> , 461, 751-761	5.4	○
1	Stochastic Amplification in Neural Networks. <i>Trends in Mathematics</i> , <b>2014</b> , 45-49	0.3	