Jesus Gomez-Gardenes

List of Publications by Year
in descending order

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134 papers	12,471 citations	31902 53 h-index	24915 109 g-index
142 all docs	142 docs citations	142 times ranked	7007 citing authors

#	Article	IF	Citations
1	The structure and dynamics of multilayer networks. Physics Reports, 2014, 544, 1-122.	10.3	2,469
2	Evolutionary dynamics of group interactions on structured populations: a review. Journal of the Royal Society Interface, 2013, 10, 20120997.	1.5	1,023
3	Diffusion Dynamics on Multiplex Networks. Physical Review Letters, 2013, 110, 028701.	2.9	738
4	Dynamical Organization of Cooperation in Complex Topologies. Physical Review Letters, 2007, 98, 108103.	2.9	462
5	Explosive Synchronization Transitions in Scale-Free Networks. Physical Review Letters, 2011, 106, 128701.	2.9	459
6	Emergence of network features from multiplexity. Scientific Reports, 2013, 3, 1344.	1.6	396
7	Evolution of Cooperation in Multiplex Networks. Scientific Reports, 2012, 2, 620.	1.6	355
8	Paths to Synchronization on Complex Networks. Physical Review Letters, 2007, 98, 034101.	2.9	312
9	Improved routing strategies for Internet traffic delivery. Physical Review E, 2004, 70, 056105.	0.8	244
10	Effects of mobility in a population of prisonerâ€™s dilemma players. Physical Review E, 2009, 79, 067101.	0.8	226
11	Modeling the multi-layer nature of the European Air Transport Network: Resilience and passengers re-scheduling under random failures. European Physical Journal: Special Topics, 2013, 215, 23-33.	1.2	226
12	Dynamics of jamming transitions in complex networks. Europhysics Letters, 2005, 71, 325-331.	0.7	213
13	Enhancement of cooperation in highly clustered scale-free networks. Physical Review E, 2008, 78, 017101.	0.8	189
14	Complex Cooperative Networks from Evolutionary Preferential Attachment. PLoS ONE, 2008, 3, e2449.	1.1	166
15	Explosive First-Order Transition to Synchrony in Networked Chaotic Oscillators. Physical Review Letters, 2012, 108, 168702.	2.9	154
16	Entropy rate of diffusion processes on complex networks. Physical Review E, 2008, 78, 065102.	0.8	150
17	Robustness of cooperation in the evolutionary prisoner's dilemma on complex networks. New Journal of Physics, 2007, 9, 184-184.	1.2	149
18	Evolutionary game dynamics in a growing structured population. New Journal of Physics, 2009, 11, 083031.	1.2	130

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19	Explosive phenomena in complex networks. Advances in Physics, 2019, 68, 123-223.	35.9	125
20	Exploring the Free Energy Landscape: From Dynamics to Networks and Back. PLoS Computational Biology, 2009, 5, e1000415.	1.5	114
21	From scale-free to Erdos-RÃ©nyi networks. Physical Review E, 2006, 73, 056124.	0.8	106
22	Critical regimes driven by recurrent mobility patterns of reactionâ€“diffusion processes in networks. Nature Physics, 2018, 14, 391-395.	6.5	106
23	Evolutionary games defined at the network mesoscale: The Public Goods game. Chaos, 2011, 21, 016113.	1.0	105
24	Intra-layer synchronization in multiplex networks. Europhysics Letters, 2015, 110, 20010.	0.7	105
25	Evolutionary dynamics on interdependent populations. Physical Review E, 2012, 86, 056113.	0.8	104
26	Scaling Breakdown in Flow Fluctuations on Complex Networks. Physical Review Letters, 2008, 100, 208701.	2.9	97
27	Spreading of sexually transmitted diseases in heterosexual populations. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 1399-1404.	3.3	94
28	Maximal-entropy random walks in complex networks with limited information. Physical Review E, 2011, 83, 030103.	0.8	94
29	Synchronization in networks with multiple interaction layers. Science Advances, 2016, 2, e1601679.	4.7	93
30	Characterization of hunter-gatherer networks and implications for cumulative culture. Nature Human Behaviour, 2017, 1, .	6.2	91
31	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>k</mml:mi><mml:mtext>â”</mml:mtext><mml:mi>co on multiplex networks. Physical Review E, 2014, 90, 032816.	0.8	89
32	Synchronizability determined by coupling strengths and topology on complex networks. Physical Review E, 2007, 75, 066106.	0.8	86
33	Modeling the Spatiotemporal Epidemic Spreading of COVID-19 and the Impact of Mobility and Social Distancing Interventions. Physical Review X, 2020, 10, .	2.8	85
34	Quantum Navigation and Ranking in Complex Networks. Scientific Reports, 2012, 2, 605.	1.6	83
35	Nonperturbative heterogeneous mean-field approach to epidemic spreading in complex networks. Physical Review E, 2011, 84, 036105.	0.8	81
36	Evolutionary vaccination dilemma in complex networks. Physical Review E, 2013, 88, 032803.	0.8	76

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37	From Modular to Centralized Organization of Synchronization in Functional Areas of the Cat Cerebral Cortex. PLoS ONE, 2010, 5, e12313.	1.1	75
38	Emergence of structural patterns out of synchronization in networks with competitive interactions. Scientific Reports, 2011, 1, 99.	1.6	73
39	Emerging Meso- and Macroscales from Synchronization of Adaptive Networks. Physical Review Letters, 2011, 107, 234103.	2.9	73
40	Analysis of remote synchronization in complex networks. Chaos, 2013, 23, 043103.	1.0	73
41	Immunization of real complex communication networks. European Physical Journal B, 2006, 49, 259-264.	0.6	72
42	Social network reciprocity as a phase transition in evolutionary cooperation. Physical Review E, 2009, 79, 026106.	0.8	71
43	Correlation Dimension of Complex Networks. Physical Review Letters, 2013, 110, 168703.	2.9	70
44	Humans display a reduced set of consistent behavioral phenotypes in dyadic games. Science Advances, 2016, 2, e1600451.	4.7	67
45	Traffic optimization in transport networks based on local routing. European Physical Journal B, 2010, 73, 303-308.	0.6	66
46	Hunter-gatherer multilevel sociality accelerates cumulative cultural evolution. Science Advances, 2020, 6, eaax5913.	4.7	66
47	Expertsâ€™ request to the Spanish Government: move Spain towards complete lockdown. Lancet, The, 2020, 395, 1193-1194.	6.3	63
48	Explosive Contagion in Networks. Scientific Reports, 2016, 6, 19767.	1.6	62
49	The Ultimatum Game in complex networks. Journal of Statistical Mechanics: Theory and Experiment, 2009, 2009, P09012.	0.9	61
50	Cooperative scale-free networks despite the presence of defector hubs. Europhysics Letters, 2009, 88, 38003.	0.7	59
51	Disentangling social and group heterogeneities: Public Goods games on complex networks. Europhysics Letters, 2011, 95, 68003.	0.7	56
52	Co-evolution of strategies and update rules in the prisoner's dilemma game on complex networks. New Journal of Physics, 2010, 12, 103034.	1.2	54
53	Natural selection of cooperation and degree hierarchy in heterogeneous populations. Journal of Theoretical Biology, 2008, 253, 296-301.	0.8	53
54	Cooperation in scale-free networks with limited associative capacities. Physical Review E, 2011, 83, 057101.	0.8	53

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55	Velocity-enhanced cooperation of moving agents playing public goods games. Physical Review E, 2012, 85, 067101.	0.8	53
56	Communicability reveals a transition to coordinated behavior in multiplex networks. Physical Review E, 2014, 89, 042819.	0.8	53
57	Annealed and mean-field formulations of disease dynamics on static and adaptive networks. Physical Review E, 2010, 82, 035101.	0.8	51
58	A mathematical model for networks with structures in the mesoscale. International Journal of Computer Mathematics, 2012, 89, 291-309.	1.0	47
59	Distance-dcovering problems in scale-free networks with degree correlations. Physical Review E, 2005, 71, 035102.	0.8	45
60	Spreading Processes in Multiplex Metapopulations Containing Different Mobility Networks. Physical Review X, 2018, 8, .	2.8	40
61	Evolutionary dynamics of time-resolved social interactions. Physical Review E, 2014, 90, 052825.	0.8	38
62	Rich do not rise early: spatio-temporal patterns in the mobility networks of different socio-economic classes. Royal Society Open Science, 2016, 3, 150654.	1.1	38
63	Solitons in the Salerno model with competing nonlinearities. Physical Review E, 2006, 73, 036608.	0.8	37
64	Evidence of structural balance in spatial ecological networks. Ecography, 2017, 40, 733-741.	2.1	37
65	Local empathy provides global minimization of congestion in communication networks. Physical Review E, 2010, 82, 056105.	0.8	35
66	Local versus global knowledge in the BarabÃ¡si-Albert scale-free network model. Physical Review E, 2004, 69, 037103.	0.8	33
67	Nonintegrable SchrÃ¶dinger discrete breathers. Chaos, 2004, 14, 1130-1147.	1.0	33
68	Mobile localization in nonlinear SchrÃ¶dinger lattices. Physics Letters, Section A: General, Atomic and Solid State Physics, 2004, 332, 213-219.	0.9	33
69	Synchronization in a semiclassical Kuramoto model. Physical Review E, 2014, 90, 052904.	0.8	31
70	Vector-borne epidemics driven by human mobility. Physical Review Research, 2020, 2, .	1.3	31
71	Interplay between population density and mobility in determining the spread of epidemics in cities. Communications Physics, 2021, 4, .	2.0	30
72	The structure of plant spatial association networks is linked to plant diversity in global drylands. Journal of Ecology, 2018, 106, 1443-1453.	1.9	29

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73	Dynamical organization towards consensus in the Axelrod model on complex networks. Physical Review E, 2010, 81, 056105.	0.8	28
74	SYNCHRONIZATION IN RANDOM GEOMETRIC GRAPHS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2009, 19, 687-693.	0.7	25
75	Resource heterogeneity leads to unjust effort distribution in climate change mitigation. PLoS ONE, 2018, 13, e0204369.	1.1	23
76	Virus spread versus contact tracing: Two competing contagion processes. Physical Review Research, 2021, 3, .	1.3	23
77	Amplitude dynamics favors synchronization in complex networks. Scientific Reports, 2016, 6, 24915.	1.6	22
78	Impact of temporal scales and recurrent mobility patterns on the unfolding of epidemics. Journal of Statistical Mechanics: Theory and Experiment, 2020, 2020, 024006.	0.9	22
79	Enhancing the stability of the synchronization of multivariable coupled oscillators. Physical Review E, 2015, 92, 032804.	0.8	20
80	Explosive transitions induced by interdependent contagion-consensus dynamics in multiplex networks. Physical Review E, 2019, 99, 062311.	0.8	20
81	Markovian approach to tackle the interaction of simultaneous diseases. Physical Review E, 2019, 100, 062308.	0.8	20
82	Discrete solitons and vortices in the two-dimensional Salerno model with competing nonlinearities. Physical Review E, 2006, 74, 036607.	0.8	19
83	Intergroup information exchange drives cooperation in the public goods game. Physical Review E, 2014, 90, 042808.	0.8	19
84	Layerâ€“layer competition in multiplex complex networks. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2015, 373, 20150117.	1.6	19
85	Network bipartivity and the transportation efficiency of European passenger airlines. Physica D: Nonlinear Phenomena, 2016, 323-324, 57-63.	1.3	19
86	COOPERATION IN THE PRISONER'S DILEMMA GAME IN RANDOM SCALE-FREE GRAPHS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2010, 20, 849-857.	0.7	18
87	Discrete breathers in two-dimensional anisotropic nonlinear SchrÃ¶dinger lattices. Physica D: Nonlinear Phenomena, 2006, 216, 31-43.	1.3	17
88	Interplay between cost and benefits triggers nontrivial vaccination uptake. Physical Review E, 2018, 97, 032308.	0.8	17
89	Pulsating campaigns of human prophylaxis driven by risk perception palliate oscillations of direct contact transmitted diseases. Physical Review Research, 2020, 2, .	1.3	17
90	Abrupt transitions from reinfections in social contagions. Europhysics Letters, 2015, 110, 58006.	0.7	16

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91	Multiplex Decomposition of Non-Markovian Dynamics and the Hidden Layer Reconstruction Problem. Physical Review X, 2018, 8, .	2.8	16
92	Infectious disease dynamics in metapopulations with heterogeneous transmission and recurrent mobility. New Journal of Physics, 2021, 23, 073019.	1.2	16
93	On the robustness of complex heterogeneous gene expression networks. Biophysical Chemistry, 2005, 115, 225-228.	1.5	15
94	Motion-induced synchronization in metapopulations of mobile agents. Physical Review E, 2013, 87, .	0.8	15
95	An Integrative Approach for Modeling and Simulation of Heterocyst Pattern Formation in Cyanobacteria Filaments. PLoS Computational Biology, 2015, 11, e1004129.	1.5	15
96	Synchronization unveils the organization of ecological networks with positive and negative interactions. Chaos, 2016, 26, 065302.	1.0	15
97	Epidemics on plants: Modeling long-range dispersal on spatially embedded networks. Journal of Theoretical Biology, 2018, 453, 1-13.	0.8	15
98	Impact of targeted attack on the spontaneous activity in spatial and biologically-inspired neuronal networks. Chaos, 2019, 29, 083126.	1.0	15
99	SYNCHRONIZATION OF NETWORKS WITH VARIABLE LOCAL PROPERTIES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2007, 17, 2501-2507.	0.7	13
100	Information sharing in quantum complex networks. Physical Review A, 2013, 87, .	1.0	12
101	Several Multiplexes in the Same City: The Role of Socioeconomic Differences in Urban Mobility. Understanding Complex Systems, 2016, , 149-164.	0.3	12
102	Cooperation in changing environments: Irreversibility in the transition to cooperation in complex networks. Chaos, Solitons and Fractals, 2013, 56, 188-193.	2.5	11
103	Optimizing diffusion in multiplexes by maximizing layer dissimilarity. Physical Review E, 2017, 95, 052312.	0.8	11
104	Evolution of microscopic and mesoscopic synchronized patterns in complex networks. Chaos, 2011, 21, 016105.	1.0	10
105	Behavioural response to heterogeneous severity of COVID-19 explains temporal variation of cases among different age groups. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, 20210119.	1.6	10
106	Modeling Communicable Diseases, Human Mobility, and Epidemics: A Review. Annalen Der Physik, 2022, 534, .	0.9	9
107	Analytical estimation of the correlation dimension of integer lattices. Chaos, 2014, 24, 043101.	1.0	8
108	Fear induced explosive transitions in the dynamics of corruption. Chaos, 2020, 30, 063107.	1.0	8

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109	Scale-free topologies and activatory-inhibitory interactions. Chaos, 2006, 16, 015114.	1.0	7
110	Random topologies and the emergence of cooperation: the role of short-cuts. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P04019.	0.9	7
111	Graph analysis of cell clusters forming vascular networks. Royal Society Open Science, 2018, 5, 171592.	1.1	7
112	Norm violation versus punishment risk in a social model of corruption. Physical Review E, 2020, 101, 022306.	0.8	6
113	Michaelisâ€“Menten dynamics in complex heterogeneous networks. Physica A: Statistical Mechanics and Its Applications, 2005, 352, 265-281.	1.2	5
114	Several Multiplexes in the Same City: The Role of Socioeconomic Differences in Urban Mobility. SSRN Electronic Journal, 2014, , .	0.4	5
115	Noise-driven amplification mechanisms governing the emergence of coherent extreme events in excitable systems. Physical Review Research, 2021, 3, .	1.3	5
116	ADAPTIVE GROWING NETWORKS COEVOLVING WITH THE SPREAD OF DISEASES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2012, 22, 1250168.	0.7	4
117	Analyzing the potential impact of BREXIT on the European research collaboration network. Chaos, 2020, 30, 063145.	1.0	4
118	Emergence of protective behaviour under different risk perceptions to disease spreading. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2022, 380, .	1.6	4
119	Reciprocal interactions out of congestion-free adaptive networks. Physical Review E, 2012, 85, 026112.	0.8	3
120	Growing Networks Driven by the Evolutionary Prisonerâ€™s Dilemma Game. Springer Optimization and Its Applications, 2012, , 115-136.	0.6	3
121	Dynamical robustness of collective neuronal activity upon targeted damage in interdependent networks. European Physical Journal: Special Topics, 2022, 231, 195-201.	1.2	3
122	Contagionâ€“diffusion processes with recurrent mobility patterns of distinguishable agents. Chaos, 2022, 32, 043102.	1.0	3
123	Mean-field nature of synchronization stability in networks with multiple interaction layers. Communications Physics, 2022, 5, .	2.0	3
124	EFFECTS OF TRAFFIC PROPERTIES AND DEGREE HETEROGENEITY IN FLOW FLUCTUATIONS ON COMPLEX NETWORKS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2012, 22, 1250170.	0.7	2
125	Reciprocity Mechanisms meet together. A previous step to bridge the gap with experiments?. Physics of Life Reviews, 2015, 14, 54-55.	1.5	2
126	Impact of human-human contagions in the spread of vector-borne diseases. European Physical Journal: Special Topics, 2018, 227, 661-672.	1.2	2

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127	A metapopulation approach to identify targets for Wolbachia-based dengue control. Chaos, 2022, 32, 041105.	1.0	2
128	Synchronization in cortical networks: Role and Emergence of Modularity. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 63-65.	0.4	1
129	Emerging Applications of Complex Networks. Complexity, 2018, 2018, 1-2.	0.9	1
130	The interconnection between independent reactive control policies drives the stringency of local containment. Chaos, Solitons and Fractals, 2022, 158, 112012.	2.5	1
131	Current trends in the modeling of biological networks. AIP Conference Proceedings, 2006, , .	0.3	0
132	Structural and dynamical properties of cellular and regulatory networks. , 0, , 155-176.		0
133	Evolutionary Dynamics of Time-Resolved Social Interactions. SSRN Electronic Journal, 0, , .	0.4	0
134	Epidemic spreading: Tailored models for COVID-19. Europhysics News, 2020, 51, 38-40.	0.1	0