Adilson E Motter

List of Publications by Year
in descending order

122 papers	9,812 citations	66234 42 h-index	37111 96 g-index
125 all docs	125 docs citations	125 times ranked	5880 citing authors

#	Article	IF	Citations
1	Cascade-based attacks on complex networks. Physical Review E, 2002, 66, 065102.	0.8	1,335
2	Heterogeneity in Oscillator Networks: Are Smaller Worlds Easier to Synchronize?. Physical Review Letters, 2003, 91, 014101.	2.9	732
3	Cascade Control and Defense in Complex Networks. Physical Review Letters, 2004, 93, 098701.	2.9	613
4	Spontaneous synchrony in power-grid networks. Nature Physics, 2013, 9, 191-197.	6.5	563
5	Network synchronization, diffusion, and the paradox of heterogeneity. Physical Review E, 2005, 71, 016116.	0.8	455
6	Mechanical metamaterials with negative compressibility transitions. Nature Materials, 2012, 11, 608-613.	13.3	344
7	A Poissonian explanation for heavy tails in e-mail communication. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 18153-18158.	3.3	328
8	Enhancing complex-network synchronization. Europhysics Letters, 2005, 69, 334-340.	0.7	316
9	Realistic control of network dynamics. Nature Communications, 2013, 4, 1942.	5.8	304
10	Universality in the Synchronization of Weighted Random Networks. Physical Review Letters, 2006, 96, 034101.	2.9	301
11	Small vulnerable sets determine large network cascades in power grids. Science, 2017, 358, .	6.0	221
12	Synchronization is optimal in nondiagonalizable networks. Physical Review E, 2006, 73, 065106.	0.8	218
13	Topology of the conceptual network of language. Physical Review E, 2002, 65, 065102.	0.8	207
14	Comparative analysis of existing models for power-grid synchronization. New Journal of Physics, 2015, 17, 015012.	1.2	186
15	Controllability Transition and Nonlocality in Network Control. Physical Review Letters, 2013, 110, 208701.	2.9	149
16	Network synchronization landscape reveals compensatory structures, quantization, and the positive effect of negative interactions. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 10342-10347.	3.3	144
17	Spontaneous synchrony breaking. Nature Physics, 2010, 6, 164-165.	6.5	133
18	Beyond Word Frequency: Bursts, Lulls, and Scaling in the Temporal Distributions of Words. PLoS ONE, 2009, 4, e7678.	1.1	132

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19	Maximum performance at minimum cost in network synchronization. Physica D: Nonlinear Phenomena, 2006, 224, 77-89.	1.3	127
20	Predicting synthetic rescues in metabolic networks. Molecular Systems Biology, 2008, 4, 168.	3.2	123
21	Stochastic Model for Power Grid Dynamics. , 2007, , .		104
22	Range-based attack on links in scale-free networks: Are long-range links responsible for the small-world phenomenon?. Physical Review E, 2002, 66, 065103.	0.8	84
23	Rescuing ecosystems from extinction cascades through compensatory perturbations. Nature Communications, 2011, 2, 170.	5.8	84
24	Signatures of small-world and scale-free properties in large computer programs. Physical Review E, 2003, 68, 017102.	0.8	83
25	Networkcontrology. Chaos, 2015, 25, 097621.	1.0	82
26	Stickiness in Hamiltonian systems: From sharply divided to hierarchical phase space. Physical Review E, 2006, 73, 026207.	0.8	76
27	Symmetric States Requiring System Asymmetry. Physical Review Letters, 2016, 117, 114101.	2.9	74
28	Attacks and Cascades in Complex Networks. Lecture Notes in Physics, 0, , 299-310.	0.3	71
29	Robustness of Optimal Synchronization in Real Networks. Physical Review Letters, 2011, 107, 034102.	2.9	71
30	Stable Chimeras and Independently Synchronizable Clusters. Physical Review Letters, 2017, 119, 084101.	2.9	67
31	Resource allocation pattern in infrastructure networks. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 224019.	0.7	63
32	Local Structure of Directed Networks. Physical Review Letters, 2008, 100, 118701.	2.9	61
33	Control of Stochastic and Induced Switching in Biophysical Networks. Physical Review X, 2015, 5, .	2.8	60
34	Relativistic Chaos is Coordinate Invariant. Physical Review Letters, 2003, 91, 231101.	2.9	55
35	Incoherence-Mediated Remote Synchronization. Physical Review Letters, 2017, 118, 174102.	2.9	55
36	Stickiness in mushroom billiards. Chaos, 2005, 15, 033105.	1.0	54

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37	Dissipative chaotic scattering. Physical Review E, 2001, 65, 015205.	0.8	50
38	Network Observability Transitions. Physical Review Letters, 2012, 109, 258701.	2.9	50
39	Niche as a Determinant of Word Fate in Online Groups. PLoS ONE, 2011, 6, e19009.	1.1	48
40	Ensemble Averageability in Network Spectra. Physical Review Letters, 2007, 98, 248701.	2.9	47
41	Vulnerability and Cosusceptibility Determine the Size of Network Cascades. Physical Review Letters, 2017, 118, 048301.	2.9	45
42	Mixmaster chaos. Physics Letters, Section A: General, Atomic and Solid State Physics, 2001, 285, 127-131.	0.9	44
43	Large-scale structural organization of social networks. Physical Review E, 2003, 68, 036105.	0.8	44
44	Introduction to focus issue: Patterns of network synchronization. Chaos, 2016, 26, 094601.	1.0	43
45	Topological Control of Synchronization Patterns: Trading Symmetry for Stability. Physical Review Letters, 2019, 122, 058301.	2.9	42
46	Hyperbolic Calculus. Advances in Applied Clifford Algebras, 1998, 8, 109-128.	0.5	41
47	Networks in motion. Physics Today, 2012, 65, 43-48.	0.3	39
48	Chaos at fifty. Physics Today, 2013, 66, 27-33.	0.3	39
49	Spontaneous Reaction Silencing in Metabolic Optimization. PLoS Computational Biology, 2008, 4, e1000236.	1.5	36
50	Reactive dynamics of inertial particles in nonhyperbolic chaotic flows. Physical Review E, 2003, 68, 056307.	0.8	35
51	Can Aerosols Be Trapped in Open Flows?. Physical Review Letters, 2007, 99, 264101.	2.9	35
52	Fluctuation-driven capacity distribution in complex networks. New Journal of Physics, 2008, 10, 053022.	1.2	35
53	Improved network performance via antagonism: From synthetic rescues to multi-drug combinations. BioEssays, 2010, 32, 236-245.	1.2	35
54	Asymmetry-induced synchronization in oscillator networks. Physical Review E, 2017, 95, 062215.	0.8	35

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55	State Observation and Sensor Selection for Nonlinear Networks. IEEE Transactions on Control of Network Systems, 2018, 5, 694-708.	2.4	33
56	Unified treatment of synchronization patterns in generalized networks with higher-order, multilayer, and temporal interactions. Communications Physics, 2021, 4, .	2.0	33
57	Bounding network spectra for network design. New Journal of Physics, 2007, 9, 182-182.	1.2	32
58	Introduction: Optimization in networks. Chaos, 2007, 17, 026101.	1.0	32
59	Doubly Transient Chaos: Generic Form of Chaos in Autonomous Dissipative Systems. Physical Review Letters, 2013, 111, 194101.	2.9	31
60	Searching in small-world networks. Physical Review E, 2003, 68, 036106.	0.8	30
61	Cascading Failures as Continuous Phase-Space Transitions. Physical Review Letters, 2017, 119, 248302.	2.9	29
62	Weighted networks are more synchronizable: how and why. AIP Conference Proceedings, 2005, , .	0.3	28
63	Chimera States in Continuous Media: Existence and Distinctness. Physical Review Letters, 2017, 119, 244101.	2.9	28
64	Symmetry-Independent Stability Analysis of Synchronization Patterns. SIAM Review, 2020, 62, 817-836.	4.2	27
65	Asymmetry underlies stability in power grids. Nature Communications, 2021, 12, 1457.	5.8	27
66	Smallest small-world network. Physical Review E, 2002, 66, 046139.	0.8	26
67	Braessâ€™s paradox and programmable behaviour in microfluidic networks. Nature, 2019, 574, 647-652.	13.7	26
68	Random heterogeneity outperforms design in network synchronization. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	26
69	Predicting growth rate from gene expression. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 367-372.	3.3	24
70	Experimental evolution of diverse Escherichia coli metabolic mutants identifies genetic loci for convergent adaptation of growth rate. PLoS Genetics, 2018, 14, e1007284.	1.5	24
71	Slave nodes and the controllability of metabolic networks. New Journal of Physics, 2009, 11, 113047.	1.2	23
72	The unfolding and control of network cascades. Physics Today, 2017, 70, 32-39.	0.3	23

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73	Identical synchronization of nonidentical oscillators: when only birds of different feathers flock together. Nonlinearity, 2018, 31, R1-R23.	0.6	22
74	Antagonistic Phenomena in Network Dynamics. Annual Review of Condensed Matter Physics, 2018, 9, 463-484.	5.2	21
75	Mechanism for Strong Chimeras. Physical Review Letters, 2021, 126, 094101.	2.9	21
76	Effective dynamics in Hamiltonian systems with mixed phase space. Physical Review E, 2005, 71, 036215.	0.8	20
77	Dispensability of Escherichia coli's latent pathways. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 3124-3129.	3.3	20
78	Network experiment demonstrates converse symmetry breaking. Nature Physics, 2020, 16, 351-356.	6.5	20
79	Marginally Unstable Periodic Orbits in Semiclassical Mushroom Billiards. Physical Review Letters, 2009, 103, 154101.	2.9	17
80	Functional observability and target state estimation in large-scale networks. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	16
81	Discovering Network Structure Beyond Communities. Scientific Reports, 2011, 1, 151.	1.6	15
82	Network-complement transitions, symmetries, and cluster synchronization. Chaos, 2016, 26, 094818.	1.0	15
83	Critical Switching in Globally Attractive Chimeras. Physical Review X, 2020, 10, .	2.8	15
84	Inertial particle trapping in an open vortical flow. Journal of Fluid Mechanics, 2014, 744, 183-216.	1.4	14
85	Synchronizing Chaos with Imperfections. Physical Review Letters, 2021, 126, 164101.	2.9	14
86	Relativistic Invariance of Lyapunov Exponents in Bounded and Unbounded Systems. Physical Review Letters, 2009, 102, 184101.	2.9	13
87	Slowly Produced MicroRNAs Control Protein Levels. Journal of Biological Chemistry, 2011, 286, 4742-4748.	1.6	13
88	Sensitive Dependence of Optimal Network Dynamics on Network Structure. Physical Review X, 2017, 7, .	2.8	12
89	Universality in active chaos. Chaos, 2004, 14, 72-78.	1.0	11
90	(Non)Invariance of Dynamical Quantities for Orbit Equivalent Flows. Communications in Mathematical Physics, 2010, 300, 411-433.	1.0	10

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91	Longitudinal Inverted Compressibility in Super-strained Metamaterials. Journal of Statistical Physics, 2013, 151, 1162-1174.	0.5	10
92	Multifaceted Dynamics of Janus Oscillator Networks. Physical Review X, 2019, 9, .	2.8	10
93	Coherent Dynamics Enhanced by Uncorrelated Noise. Physical Review Letters, 2020, 125, 094101.	2.9	10
94	Non-normality and non-monotonic dynamics in complex reaction networks. Physical Review Research, 2020, 2, .	1.3	10
95	Network structural origin of instabilities in large complex systems. Science Advances, 2022, 8, .	4.7	10
96	Regularity underlies erratic population abundances in marine ecosystems. Journal of the Royal Society Interface, 2015, 12, 20150235.	1.5	9
97	Stability Landscape of Power-Grid Synchronization**This work was supported by a Booster Award from the Institute for Sustainability and Energy at Northwestern (ISEN), the U.S. Army Research Office under Grant W911NF-15-1-0272, and the U.S. National Science Foundation under Grant DMS-1057128.. IFAC-PapersOnLine, 2015, 48, 1-6.	0.5	9
98	Anharmonic classical time crystals: A coresonance pattern formation mechanism. Physical Review Research, 2021, 3, .	1.3	9
99	Heterogeneity-stabilized homogeneous states in driven media. Nature Communications, 2021, 12, 4486.	5.8	9
100	Hierarchical Power Flow Control in Smart Grids: Enhancing Rotor Angle and Frequency Stability with Demand-Side Flexibility. IEEE Transactions on Control of Network Systems, 2021, 8, 1046-1058.	2.4	9
101	Complex Networks: from Biology to Information Technology. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 220301.	0.7	8
102	Identifying Trends in Word Frequency Dynamics. Journal of Statistical Physics, 2013, 151, 277-288.	0.5	8
103	Slim Fractals: The Geometry of Doubly Transient Chaos. Physical Review X, 2017, 7, .	2.8	8
104	Practical Challenges in Real-Time Demand Response. IEEE Transactions on Smart Grid, 2021, 12, 4573-4576.	6.2	8
105	Sample-to-sample fluctuations in real-network ensembles. Chaos, 2011, 21, 025105.	1.0	7
106	Extreme Antagonism Arising from Gene-Environment Interactions. Biophysical Journal, 2020, 119, 2074-2086.	0.2	6
107	Sub-optimal phenotypes of double-knockout mutants of Escherichia coli depend on the order of gene deletions. Integrative Biology (United Kingdom), 2015, 7, 930-939.	0.6	4
108	Spontaneous oscillations and negative-conductance transitions in microfluidic networks. Science Advances, 2020, 6, eaay6761.	4.7	4

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109	Time-metric equivalence and dimension change under time reparameterizations. Physical Review E, 2009, 79, 065202.	0.8	3
110	Distinguishing cell phenotype using cell epigenotype. Science Advances, 2020, 6, eaax7798.	4.7	3
111	Why optimal states recruit fewer reactions in metabolic networks. Discrete and Continuous Dynamical Systems, 2012, 32, 2937-2950.	0.5	3
112	Hausdorff dimension of repellors in low sensitive systems. Physics Letters, Section A: General, Atomic and Solid State Physics, 2000, 277, 18-24.	0.9	2
113	Introduction to the Special Issue on Approaches to Control Biological and Biologically Inspired Networks. IEEE Transactions on Control of Network Systems, 2018, 5, 690-693.	2.4	2
114	NECO - A scalable algorithm for NEtwork COntrol. Protocol Exchange, 0, , .	0.3	2
115	Missing links as a source of seemingly variable constants in complex reaction networks. Physical Review Research, 2020, 2, .	1.3	2
116	Introduction to Focus Issue: The 25th Anniversary of Chaos: Perspectives on Nonlinear Scienceâ€"Past, Present, and Future. Chaos, 2015, 25, 097501.	1.0	1
117	Levitation of heavy particles against gravity in asymptotically downward flows. Chaos, 2017, 27, 031103.	1.0	1
118	Cusp-scaling behavior in fractal dimension of chaotic scattering. Physical Review E, 2002, 65, 065201.	0.8	0
119	Chaos at Fifty. , 2014, , 270-287.		0
120	Early chaos theory. Physics Today, 2014, 67, 10-10.	0.3	0
121	Minimal scattering entanglement in one-dimensional trapped gases. Physical Review A, 2019, 99, .	1.0	0
122	SCALABLE APPROACHES TO CONTROL NETWORK DYNAMICS: PROSPECTS FOR CITY NETWORKS. , 2014, , .		0