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	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
2	Network structural origin of instabilities in large complex systems. Science Advances, 2022, 8, .	4.7	10
3	Asymmetry underlies stability in power grids. Nature Communications, 2021, 12, 1457.	5.8	27
4	Mechanism for Strong Chimeras. Physical Review Letters, 2021, 126, 094101.	2.9	21
5	Synchronizing Chaos with Imperfections. Physical Review Letters, 2021, 126, 164101.	2.9	14
6	Anharmonic classical time crystals: A coresonance pattern formation mechanism. Physical Review Research, 2021, 3, .	1.3	9
7	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
8	Heterogeneity-stabilized homogeneous states in driven media. Nature Communications, 2021, 12, 4486.	5.8	9
9	Unified treatment of synchronization patterns in generalized networks with higher-order, multilayer, and temporal interactions. Communications Physics, 2021, 4, .	2.0	33
10	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
11	Practical Challenges in Real-Time Demand Response. IEEE Transactions on Smart Grid, 2021, 12, 4573-4576.	6.2	8
12	Symmetry-Independent Stability Analysis of Synchronization Patterns. SIAM Review, 2020, 62, 817-836.	4.2	27
13	Coherent Dynamics Enhanced by Uncorrelated Noise. Physical Review Letters, 2020, 125, 094101.	2.9	10
14	Extreme Antagonism Arising from Gene-Environment Interactions. Biophysical Journal, 2020, 119, 2074-2086.	0.2	6
15	Spontaneous oscillations and negative-conductance transitions in microfluidic networks. Science Advances, 2020, 6, eaay6761.	4.7	4
16	Distinguishing cell phenotype using cell epigenotype. Science Advances, 2020, 6, eaax7798.	4.7	3
17	Critical Switching in Globally Attractive Chimeras. Physical Review X, 2020, 10, .	2.8	15
18	Network experiment demonstrates converse symmetry breaking. Nature Physics, 2020, 16, 351-356.	6.5	20

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19	Non-normality and non-monotonic dynamics in complex reaction networks. Physical Review Research, 2020, 2, .	1.3	10
20	Missing links as a source of seemingly variable constants in complex reaction networks. Physical Review Research, 2020, 2, .	1.3	2
21	Multifaceted Dynamics of Janus Oscillator Networks. Physical Review X, 2019, 9, .	2.8	10
22	Topological Control of Synchronization Patterns: Trading Symmetry for Stability. Physical Review Letters, 2019, 122, 058301.	2.9	42
23	Braessâ€™s paradox and programmable behaviour in microfluidic networks. Nature, 2019, 574, 647-652.	13.7	26
24	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
25	Minimal scattering entanglement in one-dimensional trapped gases. Physical Review A, 2019, 99, .	1.0	0
26	Antagonistic Phenomena in Network Dynamics. Annual Review of Condensed Matter Physics, 2018, 9, 463-484.	5.2	21
27	State Observation and Sensor Selection for Nonlinear Networks. IEEE Transactions on Control of Network Systems, 2018, 5, 694-708.	2.4	33
28	Identical synchronization of nonidentical oscillators: when only birds of different feathers flock together. Nonlinearity, 2018, 31, R1-R23.	0.6	22
29	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
30	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
31	Vulnerability and Cosusceptibility Determine the Size of Network Cascades. Physical Review Letters, 2017, 118, 048301.	2.9	45
32	Levitation of heavy particles against gravity in asymptotically downward flows. Chaos, 2017, 27, 031103.	1.0	1
33	The unfolding and control of network cascades. Physics Today, 2017, 70, 32-39.	0.3	23
34	Stable Chimeras and Independently Synchronizable Clusters. Physical Review Letters, 2017, 119, 084101.	2.9	67
35	Incoherence-Mediated Remote Synchronization. Physical Review Letters, 2017, 118, 174102.	2.9	55
36	Chimera States in Continuous Media: Existence and Distinctness. Physical Review Letters, 2017, 119, 244101.	2.9	28

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37	Cascading Failures as Continuous Phase-Space Transitions. Physical Review Letters, 2017, 119, 248302.	2.9	29
38	Sensitive Dependence of Optimal Network Dynamics on Network Structure. Physical Review X, 2017, 7, .	2.8	12
39	Small vulnerable sets determine large network cascades in power grids. Science, 2017, 358, .	6.0	221
40	Asymmetry-induced synchronization in oscillator networks. Physical Review E, 2017, 95, 062215.	0.8	35
41	Slim Fractals: The Geometry of Doubly Transient Chaos. Physical Review X, 2017, 7, .	2.8	8
42	Introduction to focus issue: Patterns of network synchronization. Chaos, 2016, 26, 094601.	1.0	43
43	Network-complement transitions, symmetries, and cluster synchronization. Chaos, 2016, 26, 094818.	1.0	15
44	Symmetric States Requiring System Asymmetry. Physical Review Letters, 2016, 117, 114101.	2.9	74
45	Introduction to Focus Issue: The 25th Anniversary of Chaos: Perspectives on Nonlinear Scienceâ€"Past, Present, and Future. Chaos, 2015, 25, 097501.	1.0	1
46	Networkcontrology. Chaos, 2015, 25, 097621.	1.0	82
47	Regularity underlies erratic population abundances in marine ecosystems. Journal of the Royal Society Interface, 2015, 12, 20150235.	1.5	9
48	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
49	Control of Stochastic and Induced Switching in Biophysical Networks. Physical Review X, 2015, 5, .	2.8	60
50	Comparative analysis of existing models for power-grid synchronization. New Journal of Physics, 2015, 17, 015012.	1.2	186
51	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
52	Chaos at Fifty. , 2014, , 270-287.		0
53	Early chaos theory. Physics Today, 2014, 67, 10-10.	0.3	0
54	Inertial particle trapping in an open vortical flow. Journal of Fluid Mechanics, 2014, 744, 183-216.	1.4	14

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55	SCALABLE APPROACHES TO CONTROL NETWORK DYNAMICS: PROSPECTS FOR CITY NETWORKS. , 2014, , .		0
56	Longitudinal Inverted Compressibility in Super-strained Metamaterials. Journal of Statistical Physics, 2013, 151, 1162-1174.	0.5	10
57	Identifying Trends in Word Frequency Dynamics. Journal of Statistical Physics, 2013, 151, 277-288.	0.5	8
58	Doubly Transient Chaos: Generic Form of Chaos in Autonomous Dissipative Systems. Physical Review Letters, 2013, 111, 194101.	2.9	31
59	Spontaneous synchrony in power-grid networks. Nature Physics, 2013, 9, 191-197.	6.5	563
60	Chaos at fifty. Physics Today, 2013, 66, 27-33.	0.3	39
61	Realistic control of network dynamics. Nature Communications, 2013, 4, 1942.	5.8	304
62	Controllability Transition and Nonlocality in Network Control. Physical Review Letters, 2013, 110, 208701.	2.9	149
63	Network Observability Transitions. Physical Review Letters, 2012, 109, 258701.	2.9	50
64	Networks in motion. Physics Today, 2012, 65, 43-48.	0.3	39
65	Mechanical metamaterials with negative compressibility transitions. Nature Materials, 2012, 11, 608-613.	13.3	344
66	Why optimal states recruit fewer reactions in metabolic networks. Discrete and Continuous Dynamical Systems, 2012, 32, 2937-2950.	0.5	3
67	Sample-to-sample fluctuations in real-network ensembles. Chaos, 2011, 21, 025105.	1.0	7
68	Rescuing ecosystems from extinction cascades through compensatory perturbations. Nature Communications, 2011, 2, 170.	5.8	84
69	Discovering Network Structure Beyond Communities. Scientific Reports, 2011, 1, 151.	1.6	15
70	Robustness of Optimal Synchronization in Real Networks. Physical Review Letters, 2011, 107, 034102.	2.9	71
71	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
72	Slowly Produced MicroRNAs Control Protein Levels. Journal of Biological Chemistry, 2011, 286, 4742-4748.	1.6	13

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73	Niche as a Determinant of Word Fate in Online Groups. PLoS ONE, 2011, 6, e19009.	1.1	48
74	(Non)Invariance of Dynamical Quantities for Orbit Equivalent Flows. Communications in Mathematical Physics, 2010, 300, 411-433.	1.0	10
75	Improved network performance via antagonism: From synthetic rescues to multi-drug combinations. BioEssays, 2010, 32, 236-245.	1.2	35
76	Spontaneous synchrony breaking. Nature Physics, 2010, 6, 164-165.	6.5	133
77	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
78	Time-metric equivalence and dimension change under time reparameterizations. Physical Review E, 2009, 79, 065202.	0.8	3
79	Marginally Unstable Periodic Orbits in Semiclassical Mushroom Billiards. Physical Review Letters, 2009, 103, 154101.	2.9	17
80	Slave nodes and the controllability of metabolic networks. New Journal of Physics, 2009, 11, 113047.	1.2	23
81	Relativistic Invariance of Lyapunov Exponents in Bounded and Unbounded Systems. Physical Review Letters, 2009, 102, 184101.	2.9	13
82	Beyond Word Frequency: Bursts, Lulls, and Scaling in the Temporal Distributions of Words. PLoS ONE, 2009, 4, e7678.	1.1	132
83	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
84	Fluctuation-driven capacity distribution in complex networks. New Journal of Physics, 2008, 10, 053022.	1.2	35
85	Spontaneous Reaction Silencing in Metabolic Optimization. PLoS Computational Biology, 2008, 4, e1000236.	1.5	36
86	Resource allocation pattern in infrastructure networks. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 224019.	0.7	63
87	Predicting synthetic rescues in metabolic networks. Molecular Systems Biology, 2008, 4, 168.	3.2	123
88	Local Structure of Directed Networks. Physical Review Letters, 2008, 100, 118701.	2.9	61
89	Complex Networks: from Biology to Information Technology. Journal of Physics A: Mathematical and Theoretical, 2008, 41, 220301.	0.7	8
90	Bounding network spectra for network design. New Journal of Physics, 2007, 9, 182-182.	1.2	32

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91	Introduction: Optimization in networks. Chaos, 2007, 17, 026101.	1.0	32
92	Ensemble Averageability in Network Spectra. Physical Review Letters, 2007, 98, 248701.	2.9	47
93	Can Aerosols Be Trapped in Open Flows?. Physical Review Letters, 2007, 99, 264101.	2.9	35
94	Stochastic Model for Power Grid Dynamics. , 2007, , .		104
95	Synchronization is optimal in nondiagonalizable networks. Physical Review E, 2006, 73, 065106.	0.8	218
96	Maximum performance at minimum cost in network synchronization. Physica D: Nonlinear Phenomena, 2006, 224, 77-89.	1.3	127
97	Universality in the Synchronization of Weighted Random Networks. Physical Review Letters, 2006, 96, 034101.	2.9	301
98	Stickiness in Hamiltonian systems: From sharply divided to hierarchical phase space. Physical Review E, 2006, 73, 026207.	0.8	76
99	Weighted networks are more synchronizable: how and why. AIP Conference Proceedings, 2005, , .	0.3	28
100	Enhancing complex-network synchronization. Europhysics Letters, 2005, 69, 334-340.	0.7	316
101	Effective dynamics in Hamiltonian systems with mixed phase space. Physical Review E, 2005, 71, 036215.	0.8	20
102	Stickiness in mushroom billiards. Chaos, 2005, 15, 033105.	1.0	54
103	Network synchronization, diffusion, and the paradox of heterogeneity. Physical Review E, 2005, 71, 016116.	0.8	455
104	Universality in active chaos. Chaos, 2004, 14, 72-78.	1.0	11
105	Cascade Control and Defense in Complex Networks. Physical Review Letters, 2004, 93, 098701.	2.9	613
106	Relativistic Chaos is Coordinate Invariant. Physical Review Letters, 2003, 91, 231101.	2.9	55
107	Reactive dynamics of inertial particles in nonhyperbolic chaotic flows. Physical Review E, 2003, 68, 056307.	0.8	35
108	Heterogeneity in Oscillator Networks: Are Smaller Worlds Easier to Synchronize?. Physical Review Letters, 2003, 91, 014101.	2.9	732

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109	Signatures of small-world and scale-free properties in large computer programs. Physical Review E, 2003, 68, 017102.	0.8	83
110	Searching in small-world networks. Physical Review E, 2003, 68, 036106.	0.8	30
111	Large-scale structural organization of social networks. Physical Review E, 2003, 68, 036105.	0.8	44
112	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
113	Cascade-based attacks on complex networks. Physical Review E, 2002, 66, 065102.	0.8	1,335
114	Smallest small-world network. Physical Review E, 2002, 66, 046139.	0.8	26
115	Cusp-scaling behavior in fractal dimension of chaotic scattering. Physical Review E, 2002, 65, 065201.	0.8	0
116	Topology of the conceptual network of language. Physical Review E, 2002, 65, 065102.	0.8	207
117	Mixmaster chaos. Physics Letters, Section A: General, Atomic and Solid State Physics, 2001, 285, 127-131.	0.9	44
118	Dissipative chaotic scattering. Physical Review E, 2001, 65, 015205.	0.8	50
119	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
120	Hyperbolic Calculus. Advances in Applied Clifford Algebras, 1998, 8, 109-128.	0.5	41
121	Attacks and Cascades in Complex Networks. Lecture Notes in Physics, 0, , 299-310.	0.3	71
122	NECO - A scalable algorithm for NEtwork COntrol. Protocol Exchange, 0, , .	0.3	2