TamÃ¡s Ìs Vicsek

List of Publications by Year
in descending order

137 papers	30,292 citations	24978 57 h-index	14156 128 g-index
141 all docs	141 docs citations	141 times ranked	17864 citing authors

#	Article	IF	Citations
1	Synergistic Benefits of Group Search in Rats. Current Biology, 2020, 30, 4733-4738.e4.	1.8	21
2	Adaptive leadership overcomes persistenceâ€“responsivity trade-off in flocking. Journal of the Royal Society Interface, 2020, 17, 20190853.	1.5	23
3	Modelling hierarchical flocking. New Journal of Physics, 2019, 21, 093048.	1.2	29
4	Differences in structure and dynamics of networks retrieved from dark and public web forums. Physica A: Statistical Mechanics and Its Applications, 2019, 525, 326-336.	1.2	10
5	Complex clinical pathways of an autoimmune disease. Journal of Complex Networks, 2018, 6, 206-214.	1.1	6
6	Why We Live in Hierarchies?. SpringerBriefs in Complexity, 2018, , .	0.1	17
7	Observations and Measurements. SpringerBriefs in Complexity, 2018, , 41-78.	0.1	2
8	Emergence of Leader-Follower Hierarchy Among Players in an On-Line Experiment. , 2018, , .		3
9	Optimized flocking of autonomous drones in confined environments. Science Robotics, 2018, 3, .	9.9	304
10	Group chasing tactics: how to catch a faster prey. New Journal of Physics, 2017, 19, 053003.	1.2	41
11	Phenomenological theory of collective decision-making. Physica A: Statistical Mechanics and Its Applications, 2017, 479, 287-298.	1.2	3
12	Friction forces position the neural anlage. Nature Cell Biology, 2017, 19, 306-317.	4.6	93
13	Glassy nature of hierarchical organizations. Scientific Reports, 2017, 7, 1382.	1.6	12
14	A nationwide study of the epidemiology of relapsing polychondritis. Clinical Epidemiology, 2016, Volume 8, 211-230.	1.5	38
15	Pattern phase transitions of self-propelled particles: gases, crystals, liquids, and mills. New Journal of Physics, 2016, 18, 103005.	1.2	21
16	Switching hierarchical leadership mechanism in homing flight of pigeon flocks. Europhysics Letters, 2016, 114, 60008.	0.7	22
17	Ecological patterns emerging as a result of the density distribution of organisms. Physics of Life Reviews, 2016, 19, 139-141.	1.5	3
18	Dimensionality constraints of light-induced rotation. Applied Physics Letters, 2015, 107, 204106.	1.5	2

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19	Hierarchical networks of scientific journals. Palgrave Communications, 2015, 1, .	4.7	21
20	To join or not to join: collective foraging strategies. Journal of Physics: Conference Series, 2015, 638, 012015.	0.3	4
21	Speed Determines Leadership and Leadership Determines Learning during Pigeon Flocking. Current Biology, 2015, 25, 3132-3137.	1.8	105
22	HIV Competition Dynamics over Sexual Networks: First Comer Advantage Conserves Founder Effects. PLoS Computational Biology, 2015, 11, e1004093.	1.5	14
23	Anomalous segregation dynamics of self-propelled particles. New Journal of Physics, 2015, 17, 063013.	1.2	16
24	Modeling the Emergence of Modular Leadership Hierarchy During the Collective Motion of Herds Made of Harems. Journal of Statistical Physics, 2015, 158, 628-646.	0.5	25
25	Flocking algorithm for autonomous flying robots. Bioinspiration and Biomimetics, 2014, 9, 025012.	1.5	132
26	Leadership and Path Characteristics during Walks Are Linked to Dominance Order and Individual Traits in Dogs. PLoS Computational Biology, 2014, 10, e1003446.	1.5	52
27	Collective foraging in heterogeneous landscapes. Journal of the Royal Society Interface, 2014, 11, 20140674.	1.5	34
28	Collective motion of cells: from experiments to models. Integrative Biology (United Kingdom), 2014, 6, 831-854.	0.6	136
29	Universal hierarchical behavior of citation networks. Journal of Statistical Mechanics: Theory and Experiment, 2014, 2014, P05023.	0.9	8
30	Shock waves on complex networks. Scientific Reports, 2014, 4, 4949.	1.6	23
31	Overlapping Modularity at the Critical Point of k-Clique Percolation. Journal of Statistical Physics, 2013, 151, 689-706.	0.5	9
32	Group performance is maximized by hierarchical competence distribution. Nature Communications, 2013, 4, 2484.	5.8	26
33	Robustness of flight leadership relations in pigeons. Animal Behaviour, 2013, 86, 723-732.	0.8	35
34	Context-dependent hierarchies in pigeons. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13049-13054.	3.3	150
35	Identification of Behaviour in Freely Moving Dogs (Canis familiaris) Using Inertial Sensors. PLoS ONE, 2013, 8, e77814.	1.1	99
36	Hierarchical Self-Organization of Non-Cooperating Individuals. PLoS ONE, 2013, 8, e81449.	1.1	16

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37	Extracting Tag Hierarchies. PLoS ONE, 2013, 8, e84133.	1.1	18
38	Ontologies and tag-statistics. New Journal of Physics, 2012, 14, 053009.	1.2	5
39	Swarming microtubules. Nature, 2012, 483, 411-412.	13.7	13
40	PARALLEL CLUSTERING WITH CFINDER. Parallel Processing Letters, 2012, 22, 1240001.	0.4	2
41	Collective motion. Physics Reports, 2012, 517, 71-140.	10.3	2,197
42	Collective motion in biological systems. Interface Focus, 2012, 2, 689-692.	1.5	64
43	Swarming Behavior in Plant Roots. PLoS ONE, 2012, 7, e29759.	1.1	45
44	Collective Motion of Cells Mediates Segregation and Pattern Formation in Co-Cultures. PLoS ONE, 2012, 7, e31711.	1.1	51
45	Controlling edge dynamics in complex networks. Nature Physics, 2012, 8, 568-573.	6.5	352
46	Hierarchy Measure for Complex Networks. PLoS ONE, 2012, 7, e33799.	1.1	179
47	Rotated multifractal network generator. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P02003.	0.9	4
48	Patterns, transitions and the role of leaders in the collective dynamics of a simple robotic flock. Journal of Statistical Mechanics: Theory and Experiment, 2011, 2011, P04010.	0.9	24
49	What makes a phase transition? Analysis of the random satisfiability problem. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 1501-1511.	1.2	3
50	Clustering of tag-induced subgraphs in complex networks. Physica A: Statistical Mechanics and Its Applications, 2010, 389, 5887-5894.	1.2	2
51	Hierarchical group dynamics in pigeon flocks. Nature, 2010, 464, 890-893.	13.7	814
52	Closing in on evaders. Nature, 2010, 466, 43-44.	13.7	79
53	Multifractal network generator. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 7640-7645.	3.3	67
54	Viral Epidemics in a Cell Culture: Novel High Resolution Data and Their Interpretation by a Percolation Theory Based Model. PLoS ONE, 2010, 5, e15571.	1.1	15

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55	Centrality properties of directed module members in social networks. Physica A: Statistical Mechanics and Its Applications, 2008, 387, 4959-4966.	1.2	8
56	Universal Patterns of Collective Motion from Minimal Models of Flocking. , 2008, , .		25
57	Comparing bird and human soaring strategies. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 4139-4143.	3.3	47
58	Fundamental statistical features and self-similar properties of tagged networks. New Journal of Physics, 2008, 10, 123026.	1.2	43
59	Differentiation of Primary Human Submandibular Gland Cells Cultured on Basement Membrane Extract. Tissue Engineering - Part A, 2008, 14, 1915-1926.	1.6	35
60	Weighted network modules. New Journal of Physics, 2007, 9, 180-180.	1.2	190
61	COMMUNITY DYNAMICS IN SOCIAL NETWORKS. Fluctuation and Noise Letters, 2007, 07, L273-L287.	1.0	11
62	Directed network modules. New Journal of Physics, 2007, 9, 186-186.	1.2	108
63	New aspects of the continuous phase transition in the scalar noise model (SNM) of collective motion. Physica A: Statistical Mechanics and Its Applications, 2007, 373, 445-454.	1.2	108
64	Phase transitions and overlapping modules in complex networks. Physica A: Statistical Mechanics and Its Applications, 2007, 378, 20-32.	1.2	11
65	Quantifying social group evolution. Nature, 2007, 446, 664-667.	13.7	1,405
66	The Critical Point of k-Clique Percolation in the ErdÅ‘sâ€“RÃ©nyi Graph. Journal of Statistical Physics, 2007, 128, 219-227.	0.5	26
67	Phase transition in the collective migration of tissue cells: Experiment and model. Physical Review E, 2006, 74, 061908.	0.8	382
68	CFinder: locating cliques and overlapping modules in biological networks. Bioinformatics, 2006, 22, 1021-1023.	1.8	845
69	Initiating a Mexican wave: An instantaneous collective decision with both short- and long-range interactions. Physica A: Statistical Mechanics and Its Applications, 2006, 369, 830-840.	1.2	2
70	Uncovering the overlapping community structure of complex networks in nature and society. Nature, 2005, 435, 814-818.	13.7	4,445
71	Dystroglycan is involved in laminin-1-stimulated motility of MÃ¼ller glial cells: Combined velocity and directionality analysis. Glia, 2005, 49, 492-500.	2.5	14
72	Patterns in the collective behavior of humans. AIP Conference Proceedings, 2005, , .	0.3	6

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73	Clique Percolation in Random Networks. Physical Review Letters, 2005, 94, 160202.	2.9	411
74	COMPLEXITY IN THE COLLECTIVE BEHAVIOUR OF HUMANS. , 2005, , .		0
75	Topological phase transitions of random networks. Physica A: Statistical Mechanics and Its Applications, 2004, 334, 583-590.	1.2	36
76	Complexity: The bigger picture. Nature, 2002, 418, 131-131.	13.7	156
77	Deterministic scale-free networks. Physica A: Statistical Mechanics and Its Applications, 2001, 299, 559-564.	1.2	381
78	A question of scale. Nature, 2001, 411, 421-421.	13.7	102
79	Dynamics of cell aggregation during in vitro neurogenesis by immortalized neuroectodermal progenitors. Journal of Neuroscience Research, 2000, 60, 184-194.	1.3	27
80	Proliferative and migratory responses of astrocytes to in vitro injury. Journal of Neuroscience Research, 2000, 61, 421-429.	1.3	77
81	Collective behavior of interacting self-propelled particles. Physica A: Statistical Mechanics and Its Applications, 2000, 281, 17-29.	1.2	308
82	Simulating dynamical features of escape panic. Nature, 2000, 407, 487-490.	13.7	3,857
83	An Experimental Study of the Fluctuations in Granular Drag. Materials Research Society Symposia Proceedings, 2000, 627, 1.	0.1	0
84	Locomotion and proliferation of glioblastoma cells in vitro: statistical evaluation of videomicroscopic observations. Journal of Neurosurgery, 2000, 92, 428-434.	0.9	55
85	Freezing by Heating in a Driven Mesoscopic System. Physical Review Letters, 2000, 84, 1240-1243.	2.9	425
86	Dynamics of cell aggregation during in vitro neurogenesis by immortalized neuroectodermal progenitors. , 2000, 60, 184.		1
87	Proliferative and migratory responses of astrocytes to in vitro injury. , 2000, 61, 421.		1
88	Optimal self-organization. New Journal of Physics, 1999, 1, 13-13.	1.2	124
89	Application of statistical mechanics to collective motion in biology. Physica A: Statistical Mechanics and Its Applications, 1999, 274, 182-189.	1.2	49
90	Collective motion of organisms in three dimensions. Physica A: Statistical Mechanics and Its Applications, 1999, 264, 299-304.	1.2	105

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91	Collective Motion of Self-Propelled Particles: Kinetic Phase Transition in One Dimension. Physical Review Letters, 1999, 82, 209-212.	2.9	220
92	Realistic models of biological motion. Physica A: Statistical Mechanics and Its Applications, 1998, 249, 397-406.	1.2	13
93	Exponential Distribution of Locomotion Activity in Cell Cultures. Physical Review Letters, 1998, 81, 3038-3041.	2.9	94
94	Chemomodulation of cellular movement, collective formation of vortices by swarming bacteria, and colonial development. Physica A: Statistical Mechanics and Its Applications, 1997, 238, 181-197.	1.2	81
95	Complex spatiotemporal patterns in two lattice models with instability. Physica A: Statistical Mechanics and Its Applications, 1996, 233, 754-766.	1.2	2
96	Response of bacterial colonies to imposed anisotropy. Physical Review E, 1996, 53, 1835-1843.	0.8	15
97	Formation of complex bacterial colonies via self-generated vortices. Physical Review E, 1996, 54, 1791-1801.	0.8	219
98	Possible origin of power-law behavior inn-tuple Zipf analysis. Physical Review E, 1996, 53, 6371-6375.	0.8	12
99	Lattice-gas model for collective biological motion. Physical Review E, 1995, 52, 5297-5303.	0.8	46
100	Cooperative Transport of Brownian Particles. Physical Review Letters, 1995, 75, 374-377.	2.9	168
101	Cooperative Formation of Chiral Patterns during Growth of Bacterial Colonies. Physical Review Letters, 1995, 75, 2899-2902.	2.9	124
102	COOPERATIVE STRATEGIES IN FORMATION OF COMPLEX BACTERIAL PATTERNS. Fractals, 1995, 03, 849-868.	1.8	15
103	Novel Type of Phase Transition in a System of Self-Driven Particles. Physical Review Letters, 1995, 75, 1226-1229.	2.9	5,647
104	COMMUNICATION, REGULATION AND CONTROL DURING COMPLEX PATTERNING OF BACTERIAL COLONIES. Fractals, 1994, 02, 15-44.	1.8	57
105	Generic modelling of cooperative growth patterns in bacterial colonies. Nature, 1994, 368, 46-49.	13.7	520
106	Cooperative Strategies and Genome Cybernetics in Formation of Complex Bacterial Patterns. Materials Research Society Symposia Proceedings, 1994, 367, 405.	0.1	0
107	COMMUNICATION, REGULATION AND CONTROL DURING COMPLEX PATTERNING OF BACTERIAL COLONIES. , 1994, , 3-32.		0
108	Kinetic roughening in a model of sedimentation of granular materials. Physical Review A, 1992, 46, 4577-4581.	1.0	18

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109	Multifractality of growing surfaces. Physical Review A, 1992, 45, R6951-R6954.	1.0	62
110	DYNAMICS OF GROWING SELF-AFFINE SURFACES. , 1992, , 237-248.		1
111	Multifractality of self-affine fractals. Physical Review A, 1991, 44, 2730-2733.	1.0	333
112	Self-affine fractal analysis of protein structures. Chaos, Solitons and Fractals, 1991, 1, 431-438.	2.5	6
113	Multifractal spectra of multi-affine functions. Physica A: Statistical Mechanics and Its Applications, 1991, 178, 17-28.	1.2	98
114	Ballistic deposition with power-law noise: A variant of the Zhang model. Physical Review A, 1991, 43, 7113-7116.	1.0	45
115	Anomalous noise distribution of the interface in two-phase fluid flow. Physical Review Letters, 1991, 67, 3207-3210.	2.9	81
116	Self-affine growth of bacterial colonies. Physica A: Statistical Mechanics and Its Applications, 1990, 167, 315-321.	1.2	204
117	Mass multifractals. Physica A: Statistical Mechanics and Its Applications, 1990, 168, 490-497.	1.2	68
118	Simulating Fractal Aggregation. Computers in Physics, 1990, 4, 44.	0.6	8
119	Comment on â€˜â€˜Self-affine fractal interfaces from immiscible displacement in porous mediaâ€™â€™. Physical Review Letters, 1990, 65, 1388-1388.	2.9	58
120	Tracing a diffusion-limited aggregate: Self-affine versus self-similar scaling. Physical Review A, 1990, 41, 6881-6883.	1.0	6
121	Determination of fractal dimensions for geometrical multifractals. Physica A: Statistical Mechanics and Its Applications, 1989, 159, 155-166.	1.2	154
122	Deterministic models of fractal and multifractal growth. Physica D: Nonlinear Phenomena, 1989, 38, 356-361.	1.3	10
123	Laplacian Pattern Formation. Europhysics News, 1988, 19, 24-27.	0.1	9
124	Fractal distribution of galaxies modeled by a cellular-automaton-type stochastic process. Physical Review Letters, 1987, 58, 2818-2821.	2.9	22
125	Viscous fingering with imposed uniaxial anisotropy. Physical Review A, 1987, 35, 2353-2356.	1.0	63
126	Transitions of viscous fingering patterns in nematic liquid crystals. Nature, 1986, 323, 424-425.	13.7	114

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127	Singularities and asymptotics in diffusion-limited aggregation. Physical Review Letters, 1986, 57, 3303-3303.	2.9	10
128	Optimized phenomenological renormalization group for geometrical models: Applications to diffusion-limited aggregation. Physical Review A, 1985, 32, 2557-2559.	1.0	7
129	Are Random Fractal Clusters Isotropic?. Physical Review Letters, 1985, 55, 641-644.	2.9	53
130	Internal structure of diffusion-limited aggregates. Physical Review A, 1985, 32, 685-688.	1.0	71
131	Formation of solidification patterns in aggregation models. Physical Review A, 1985, 32, 3084-3089.	1.0	79
132	Scaling in steady-state cluster-cluster aggregation. Physical Review A, 1985, 32, 1122-1128.	1.0	91
133	Dynamic cluster-size distribution in cluster-cluster aggregation: Effects of cluster diffusivity. Physical Review B, 1985, 31, 564-569.	1.1	260
134	Cluster size distribution in chemically controlled clusterâ€“cluster aggregation. Journal of Chemical Physics, 1985, 83, 4144-4150.	1.2	121
135	Pattern Formation in Diffusion-Limited Aggregation. Physical Review Letters, 1984, 53, 2281-2284.	2.9	259
136	Dynamic Scaling for Aggregation of Clusters. Physical Review Letters, 1984, 52, 1669-1672.	2.9	523
137	Diffusion-Controlled Deposition: Cluster Statistics and Scaling. Physical Review Letters, 1983, 51, 2382-2385.	2.9	108