Chao Tang

List of Publications by Year
in descending order

130 papers	22,558 citations	50276 46 h-index	17592 121 g-index
143 all docs	143 docs citations	143 times ranked	15190 citing authors

#	ARTICLE	IF	CITATIONS
1	Self-organized criticality: An explanation of the 1/<i>f</i>noise. Physical Review Letters, 1987, 59, 381-384.	7.8	6,415
2	Self-organized criticality. Physical Review A, 1988, 38, 364-374.	2.5	3,730
3	Defining Network Topologies that Can Achieve Biochemical Adaptation. Cell, 2009, 138, 760-773.	28.9	1,354
4	Earthquakes as a selfâ€organized critical phenomenon. Journal of Geophysical Research, 1989, 94, 15635-15637.	3.3	1,020
5	Localization Problem in One Dimension: Mapping and Escape. Physical Review Letters, 1983, 50, 1870-1872.	7.8	1,018
6	The yeast cell-cycle network is robustly designed. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 4781-4786.	7.1	953
7	Viscous flows in two dimensions. Reviews of Modern Physics, 1986, 58, 977-999.	45.6	674
8	Critical wave functions and a Cantor-set spectrum of a one-dimensional quasicrystal model. Physical Review B, 1987, 35, 1020-1033.	3.2	662
9	Robust, Tunable Biological Oscillations from Interlinked Positive and Negative Feedback Loops. Science, 2008, 321, 126-129.	12.6	602
10	A forest-fire model and some thoughts on turbulence. Physics Letters, Section A: General, Atomic and Solid State Physics, 1990, 147, 297-300.	2.1	388
11	Critical Exponents and Scaling Relations for Self-Organized Critical Phenomena. Physical Review Letters, 1988, 60, 2347-2350.	7.8	360
12	Accuracy of phase-contrast flow measurements in the presence of partial-volume effects. Journal of Magnetic Resonance Imaging, 1993, 3, 377-385.	3.4	276
13	Induction of Pluripotency in Mouse Somatic Cells with Lineage Specifiers. Cell, 2013, 153, 963-975.	28.9	272
14	Nature of Driving Force for Protein Folding: A Result From Analyzing the Statistical Potential. Physical Review Letters, 1997, 79, 765-768.	7.8	195
15	Hierarchical Modularity and the Evolution of Genetic Interactomes across Species. Molecular Cell, 2012, 46, 691-704.	9.7	185
16	Diffusion-limited aggregation and the Saffman-Taylor problem. Physical Review A, 1985, 31, 1977-1979.	2.5	181
17	Global scaling properties of the spectrum for a quasiperiodic schrÃ¶dinger equation. Physical Review B, 1986, 34, 2041-2044.	3.2	165
18	Finding multiple target optimal intervention in diseaseâ€related molecular network. Molecular Systems Biology, 2008, 4, 228.	7.2	165

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19	Designing Synthetic Regulatory Networks Capable of Self-Organizing Cell Polarization. Cell, 2012, 151, 320-332.	28.9	163
20	Mean field theory of self-organized critical phenomena. Journal of Statistical Physics, 1988, 51, 797-802.	1.2	151
21	Design Principles of Regulatory Networks: Searching for the Molecular Algorithms of the Cell. Molecular Cell, 2013, 49, 202-212.	9.7	139
22	Single-Cell RNA-Seq Reveals Dynamic Early Embryonic-like Programs during Chemical Reprogramming. Cell Stem Cell, 2018, 23, 31-45.e7.	11.1	122
23	Robustness and modular design of the Drosophila segment polarity network. Molecular Systems Biology, 2006, 2, 70.	7.2	114
24	Self-Organized Criticality in Nonconserved Systems. Physical Review Letters, 1995, 74, 742-745.	7.8	112
25	Growth strategy of microbes on mixed carbon sources. Nature Communications, 2019, 10, 1279.	12.8	105
26	Specificity of Trypsin and Chymotrypsin: Loop-Motion-Controlled Dynamic Correlation as a Determinant. Biophysical Journal, 2005, 89, 1183-1193.	0.5	104
27	Synergistic and Antagonistic Drug Combinations Depend on Network Topology. PLoS ONE, 2014, 9, e93960.	2.5	99
28	Phase organization. Physical Review Letters, 1987, 58, 1161-1164.	7.8	98
29	Correlation between sequence hydrophobicity and surface-exposure pattern of database proteins. Protein Science, 2004, 13, 752-762.	7.6	90
30	Dynamic Simulations on the Arachidonic Acid Metabolic Network. PLoS Computational Biology, 2007, 3, e55.	3.2	90
31	A light-inducible organelle-targeting system for dynamically activating and inactivating signaling in budding yeast. Molecular Biology of the Cell, 2013, 24, 2419-2430.	2.1	90
32	Designability, thermodynamic stability, and dynamics in protein folding: A lattice model study. Journal of Chemical Physics, 1999, 110, 1252-1262.	3.0	82
33	Function constrains network architecture and dynamics: A case study on the yeast cell cycle Boolean network. Physical Review E, 2007, 75, 051907.	2.1	81
34	Hydrophobic interaction and hydrogen-bond network for a methane pair in liquid water. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 2626-2630.	7.1	78
35	<i>Arabidopsis</i> DET1 degrades HFR1 but stabilizes PIF1 to precisely regulate seed germination. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3817-3822.	7.1	69
36	Multiple mechanisms determine the order of APC/C substrate degradation in mitosis. Journal of Cell Biology, 2014, 207, 23-39.	5.2	68

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37	Stochastic model of yeast cell-cycle network. Physica D: Nonlinear Phenomena, 2006, 219, 35-39.	2.8	67
38	Reliable cell cycle commitment in budding yeast is ensured by signal integration. ELife, 2015, 4, .	6.0	67
39	Nature of Phase Transitions of Superconducting Wire Networks in a Magnetic Field. Physical Review Letters, 1996, 76, 2989-2992.	7.8	62
40	Flexibility of Î±-Helices: Results of a Statistical Analysis of Database Protein Structures. Journal of Molecular Biology, 2003, 327, 229-237.	4.2	62
41	Designability of protein structures: A lattice-model study using the Miyazawa-Jernigan matrix. Proteins: Structure, Function and Bioinformatics, 2002, 49, 403-412.	2.6	60
42	The designability of protein structures. Journal of Molecular Graphics and Modelling, 2001, 19, 157-167.	2.4	56
43	Origin of scaling behavior of protein packing density: A sequential Monte Carlo study of compact long chain polymers. Journal of Chemical Physics, 2003, 118, 6102-6109.	3.0	56
44	Network Topologies That Can Achieve Dual Function of Adaptation and Noise Attenuation. Cell Systems, 2019, 9, 271-285.e7.	6.2	56
45	Human pluripotent stem-cell-derived islets ameliorate diabetes in non-human primates. Nature Medicine, 2022, 28, 272-282.	30.7	55
46	Odor-evoked inhibition of olfactory sensory neurons drives olfactory perception in Drosophila. Nature Communications, 2017, 8, 1357.	12.8	53
47	A physicist's sandbox. Journal of Statistical Physics, 1989, 54, 1441-1458.	1.2	52
48	Rationalizing translation attenuation in the network architecture of the unfolded protein response. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 20280-20285.	7.1	51
49	Design Principles of the Yeast G1/S Switch. PLoS Biology, 2013, 11, e1001673.	5.6	51
50	Correction of partial-volume effects in phase-contrast flow measurements. Journal of Magnetic Resonance Imaging, 1995, 5, 175-180.	3.4	50
51	Costs and Benefits of Mutational Robustness in RNA Viruses. Cell Reports, 2014, 8, 1026-1036.	6.4	49
52	SOC and the Bean critical state. Physica A: Statistical Mechanics and Its Applications, 1993, 194, 315-320.	2.6	47
53	Establishment of a morphological atlas of the Caenorhabditis elegans embryo using deep-learning-based 4D segmentation. Nature Communications, 2020, 11, 6254.	12.8	45
54	Phases of Josephson Junction Ladders. Physical Review Letters, 1995, 75, 3930-3933.	7.8	44

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55	Flexibility of Î²-sheets: Principal component analysis of database protein structures. Proteins: Structure, Function and Bioinformatics, 2004, 55, 91-98.	2.6	43
56	Peak effect in superconductors: melting of Larkin domains. Europhysics Letters, 1996, 35, 597-602.	2.0	42
57	Emergence of highly designable protein-backbone conformations in an off-lattice model. Proteins: Structure, Function and Bioinformatics, 2002, 47, 506-512.	2.6	42
58	Design of Tunable Oscillatory Dynamics in a Synthetic NF-Î°B Signaling Circuit. Cell Systems, 2017, 5, 460-470.e5.	6.2	39
59	Decision making of the p53 network: Death by integration. Journal of Theoretical Biology, 2011, 271, 205-211.	1.7	38
60	Cell Cycle Inhibitor Whi5 Records Environmental Information to Coordinate Growth and Division in Yeast. Cell Reports, 2019, 29, 987-994.e5.	6.4	38
61	Symmetry and designability for lattice protein models. Journal of Chemical Physics, 2000, 113, 8329-8336.	3.0	37
62	Low Cell-Matrix Adhesion Reveals Two Subtypes of Human Pluripotent Stem Cells. Stem Cell Reports, 2018, 11, 142-156.	4.8	37
63	Simple models of the protein folding problem. Physica A: Statistical Mechanics and Its Applications, 2000, 288, 31-48.	2.6	35
64	Designability and thermal stability of protein structures. Polymer, 2004, 45, 699-705.	3.8	35
65	1/fNoise in Bak-Tang-Wiesenfeld Models on Narrow Stripes. Physical Review Letters, 1999, 83, 2449-2452.	7.8	34
66	Circulating re-entrant waves promote maturation of hiPSC-derived cardiomyocytes in self-organized tissue ring. Communications Biology, 2020, 3, 122.	4.4	32
67	Nanog induced intermediate state in regulating stem cell differentiation and reprogramming. BMC Systems Biology, 2018, 12, 22.	3.0	31
68	Fast tree search for enumeration of a lattice model of protein folding. Journal of Chemical Physics, 2002, 116, 352.	3.0	29
69	Exact solution of a stochastic directed sandpile model. Physical Review E, 2001, 63, 026111.	2.1	28
70	Designability of Â-helical proteins. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 11163-11168.	7.1	28
71	Dynamic Studies of Scaffold-Dependent Mating Pathway in Yeast. Biophysical Journal, 2006, 91, 3986-4001.	0.5	28
72	Droplet model for autocorrelation functions in an Ising ferromagnet. Physical Review A, 1989, 40, 995-1003.	2.5	27

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73	Incommensurability in the frustrated two-dimensionalXYmodel. Physical Review B, 1999, 60, 3163-3168.	3.2	26
74	Network Motifs Capable of Decoding Transcription Factor Dynamics. Scientific Reports, 2018, 8, 3594.	3.3	26
75	Adaptation with transcriptional regulation. Scientific Reports, 2017, 7, 42648.	3.3	25
76	Chemical perturbations reveal that RUVBL2 regulates the circadian phase in mammals. Science Translational Medicine, 2020, 12, .	12.4	25
77	Dynamics and noise spectra of a driven single flux line in superconductors. Physical Review Letters, 1994, 72, 1264-1267.	7.8	23
78	Cell cycle synchronization by nutrient modulation. Integrative Biology (United Kingdom), 2012, 4, 328.	1.3	21
79	Finding gene network topologies for given biological function with recurrent neural network. Nature Communications, 2021, 12, 3125.	12.8	19
80	Patterns and scaling properties in a ballistic deposition model. Physical Review Letters, 1993, 71, 2769-2772.	7.8	18
81	Domain Walls and Phase Transitions in the Frustrated Two-DimensionalXYModel. Physical Review Letters, 1997, 79, 451-454.	7.8	17
82	Generic properties of random gene regulatory networks. Quantitative Biology, 2013, 1, 253-260.	0.5	15
83	Identifying proteins of high designability via surface-exposure patterns. Proteins: Structure, Function and Bioinformatics, 2002, 47, 295-304.	2.6	14
84	Optimal compressed sensing strategies for an array of nonlinear olfactory receptor neurons with and without spontaneous activity. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 20286-20295.	7.1	14
85	SCUMBLE: a method for systematic and accurate detection of codon usage bias by maximum likelihood estimation. Nucleic Acids Research, 2008, 36, 3819-3827.	14.5	13
86	Whi5 is diluted and protein synthesis does not dramatically increase in pre-<i>Start</i> G1. Molecular Biology of the Cell, 2022, 33, lt1.	2.1	13
87	Live visualization of genomic loci with BiFC-TALE. Scientific Reports, 2017, 7, 40192.	3.3	12
88	Statistical mechanics of RNA folding: Importance of alphabet size. Physical Review E, 2003, 68, 041904.	2.1	11
89	Gibbs sampling and helix-cap motifs. Nucleic Acids Research, 2005, 33, 5343-5353.	14.5	10
90	Early-warning signals of critical transition: Effect of extrinsic noise. Physical Review E, 2018, 97, 032406.	2.1	10

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91	Computable early Caenorhabditis elegans embryo with a phase field model. PLoS Computational Biology, 2022, 18, e1009755.	3.2	10
92	Low-energy excitations and phase transitions in the frustrated two-dimensionalXYmodel. Physical Review B, 1998, 58, 6591-6607.	3.2	9
93	Flux Balance Analysis of Ammonia Assimilation Network in E. coli Predicts Preferred Regulation Point. PLoS ONE, 2011, 6, e16362.	2.5	9
94	Community detection for networks with unipartite and bipartite structure. New Journal of Physics, 2014, 16, 093001.	2.9	9
95	Why and how the nematodeâ€™s early embryogenesis can be precise and robust: a mechanical perspective. Physical Biology, 2020, 17, 026001.	1.8	9
96	Structure space of model proteins: A principal component analysis. Journal of Chemical Physics, 2003, 118, 4277-4284.	3.0	8
97	QB: A new inter- and multi-disciplinary forum for modeling, engineering and understanding life. Quantitative Biology, 2013, 1, 1-2.	0.5	7
98	Bi-functional biochemical networks. Physical Biology, 2019, 16, 016001.	1.8	7
99	Chemicals orchestrate reprogramming with hierarchical activation of master transcription factors primed by endogenous Sox17 activation. Communications Biology, 2020, 3, 629.	4.4	7
100	Comment on "Relaxation at the Angle of Repose". Physical Review Letters, 1989, 62, 110-110.	7.8	6
101	Quantitative investigation reveals distinct phases in Drosophila sleep. Communications Biology, 2021, 4, 364.	4.4	6
102	Chemical Pretreatment Activated a Plastic State Amenable to Direct Lineage Reprogramming. Frontiers in Cell and Developmental Biology, 2022, 10, 865038.	3.7	6
103	Scale Invariant Spatial and Temporal Fluctuations in Complex Systems. , 1988, , 329-335.		5
104	Computational study on ratio-sensing in yeast galactose utilization pathway. PLoS Computational Biology, 2020, 16, e1007960.	3.2	5
105	Cell-to-cell variability in inducible Caspase9-mediated cell death. Cell Death and Disease, 2022, 13, 34.	6.3	5
106	Synthetic robust perfect adaptation achieved by negative feedback coupling with linear weak positive feedback. Nucleic Acids Research, 2022, 50, 2377-2386.	14.5	5
107	Adaptation through proportion. Physical Biology, 2016, 13, 046007.	1.8	4
108	Analysis of Circulating Waves in Tissue Rings derived from Human Induced Pluripotent Stem Cells. Scientific Reports, 2020, 10, 2984.	3.3	4

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109	Volume segregation programming in a nematode's early embryogenesis. Physical Review E, 2021, 104, 054409.	2.1	4
110	A Multiclassifier System to Identify and Subtype Congenital Adrenal Hyperplasia Based on Circulating Steroid Hormones. Journal of Clinical Endocrinology and Metabolism, 2022, 107, e3304-e3312.	3.6	4
111	Designing the Scientific Cradle for Quantitative Biologists. ACS Synthetic Biology, 2012, 1, 254-255.	3.8	3
112	Multilevel regulation of muscle-specific transcription factor hlh-1 during Caenorhabditis elegans embryogenesis. Development Genes and Evolution, 2020, 230, 265-278.	0.9	3
113	Critical slowing down and attractive manifold: A mechanism for dynamic robustness in the yeast cell-cycle process. Physical Review E, 2020, 101, 042405.	2.1	3
114	Visualization of Genomic Loci in Living Cells with BiFCâ€TALE. Current Protocols in Cell Biology, 2019, 82, e78.	2.3	2
115	Reconstructing the multicellular structure of a developing metazoan embryo with repulsion-attraction model and cell-cell connection atlas in vivo. Journal of Physics: Conference Series, 2020, 1592, 012020.	0.4	2
116	Investigating Spatio-Temporal Cellular Interactions in Embryonic Morphogenesis by 4D Nucleus Tracking and Systematic Comparative Analysis â€" Taking Nematodes C. Elegans and C. Briggsae as Examples. , 2021, , .		2
117	An Atlas of Network Topologies Reveals Design Principles for Caenorhabditis elegans Vulval Precursor Cell Fate Patterning. PLoS ONE, 2015, 10, e0131397.	2.5	2
118	Short-Term Plasticity Regulates Both Divisive Normalization and Adaptive Responses in Drosophila Olfactory System. Frontiers in Computational Neuroscience, 2021, 15, 730431.	2.1	2
119	Are Earthquakes, Fractals, and 1/f Noise Self-organized Critical Phenomena?. Springer Series in Synergetics, 1989, , 274-279.	0.4	2
120	Tang, Feng, and Golubovic Reply:. Physical Review Letters, 1995, 74, 3500-3500.	7.8	1
121	Dynamics of a driven single flux line in superconductors. Physical Review B, 1995, 51, 8457-8461.	3.2	1
122	A systematic study of the determinants of protein abundance memory in cell lineage. Science Bulletin, 2018, 63, 1051-1058.	9.0	1
123	Protocol for Titrating Gene Expression Levels in Budding Yeast. STAR Protocols, 2020, 1, 100082.	1.2	1
124	Redâ€•and Farâ€Redâ€Emitting Zinc Probes with Minimal Phototoxicity for Multiplexed Recording of Orchestrated Insulin Secretion. Angewandte Chemie, 2021, 133, 26050.	2.0	1
125	A more robust Boolean model describing inhibitor binding. Frontiers of Electrical and Electronic Engineering in China: Selected Publications From Chinese Universities, 2008, 3, 371-375.	0.6	0
126	Bridging cross-cultural gaps in scientific exchange through innovative team challenge workshops. Quantitative Biology, 2013, 1, 3-8.	0.5	0

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127	The Center for Quantitative Biology at Peking University. Quantitative Biology, 2015, 3, 1-3.	0.5	0
128	Innentitelbild: Redâ€•and Farâ€Redâ€Emitting Zinc Probes with Minimal Phototoxicity for Multiplexed Recording of Orchestrated Insulin Secretion (Angew. Chem. 49/2021). Angewandte Chemie, 2021, 133, 25790-25790.	2.0	0
129	Earthquakes as a Complex Phenomenon. Woodward Conference, 1992, , 209-220.	0.3	0
130	Self-organized Critical Phenomena. Series on Directions in Condensed Matter Physics, 1988, , 238-256.	0.1	0