

Vincent Hakim

List of Publications by Year in descending order

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86
papers

7,151
citations

66343
42
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60623
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95
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docs citations

95
times ranked

5256
citing authors

#	ARTICLE	IF	CITATIONS
1	Fast Global Oscillations in Networks of Integrate-and-Fire Neurons with Low Firing Rates. <i>Neural Computation</i> , 1999, 11, 1621-1671.	2.2	805
2	Laws of crack motion and phase-field models of fracture. <i>Journal of the Mechanics and Physics of Solids</i> , 2009, 57, 342-368.	4.8	318
3	Quantum theory of a free particle interacting with a linearly dissipative environment. <i>Physical Review A</i> , 1985, 32, 423-434.	2.5	283
4	From Subthreshold to Firing-Rate Resonance. <i>Journal of Neurophysiology</i> , 2003, 89, 2538-2554.	1.8	267
5	Design of genetic networks with specified functions by evolution in silico. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2004, 101, 580-585.	7.1	257
6	Shape Selection of Saffman-Taylor Fingers. <i>Physical Review Letters</i> , 1986, 56, 2036-2039.	7.8	226
7	Exact First-Passage Exponents of 1D Domain Growth: Relation to a Reaction-Diffusion Model. <i>Physical Review Letters</i> , 1995, 75, 751-754.	7.8	221
8	Electrical Coupling Mediates Tunable Low-Frequency Oscillations and Resonance in the Cerebellar Golgi Cell Network. <i>Neuron</i> , 2009, 61, 126-139.	8.1	206
9	High-Frequency Organization and Synchrony of Activity in the Purkinje Cell Layer of the Cerebellum. <i>Neuron</i> , 2008, 58, 775-788.	8.1	200
10	How Connectivity, Background Activity, and Synaptic Properties Shape the Cross-Correlation between Spike Trains. <i>Journal of Neuroscience</i> , 2009, 29, 10234-10253.	3.6	191
11	Diffusion and Localization of a Particle in a Periodic Potential Coupled to a Dissipative Environment. <i>Physical Review Letters</i> , 1985, 54, 263-266.	7.8	186
12	Optimal Information Storage and the Distribution of Synaptic Weights. <i>Neuron</i> , 2004, 43, 745-757.	8.1	186
13	Nonlinear Schrödinger flow past an obstacle in one dimension. <i>Physical Review E</i> , 1997, 55, 2835-2845.	2.1	184
14	Collective Cell Motion in an Epithelial Sheet Can Be Quantitatively Described by a Stochastic Interacting Particle Model. <i>PLoS Computational Biology</i> , 2013, 9, e1002944.	3.2	182
15	Dynamics of the globally coupled complex Ginzburg-Landau equation. <i>Physical Review A</i> , 1992, 46, R7347-R7350.	2.5	161
16	Collective cell migration: a physics perspective. <i>Reports on Progress in Physics</i> , 2017, 80, 076601.	20.1	158
17	Bosonization of a two-level system with dissipation. <i>Physical Review B</i> , 1985, 32, 4410-4418.	3.2	157
18	Fronts ϕ vs ϕ . Solitary Waves in Nonequilibrium Systems. <i>Europhysics Letters</i> , 1990, 11, 19-24.	2.0	147

#	ARTICLE	IF	CITATIONS
19	What can we learn from synaptic weight distributions?. Trends in Neurosciences, 2007, 30, 622-629.	8.6	147
20	Persistent Spins in the Linear Diffusion Approximation of Phase Ordering and Zeros of Stationary Gaussian Processes. Physical Review Letters, 1996, 77, 2871-2874.	7.8	133
21	Sparsely synchronized neuronal oscillations. Chaos, 2008, 18, 015113.	2.5	133
22	Theory of spiral wave dynamics in weakly excitable media: Asymptotic reduction to a kinematic model and applications. Physical Review E, 1999, 60, 5073-5105.	2.1	106
23	Crack Path Prediction in Anisotropic Brittle Materials. Physical Review Letters, 2005, 95, 235501.	7.8	99
24	Deriving structure from evolution: metazoan segmentation. Molecular Systems Biology, 2007, 3, 154.	7.2	98
25	Synchronization properties of networks of electrically coupled neurons in the presence of noise and heterogeneities. Journal of Computational Neuroscience, 2009, 26, 369-392.	1.0	96
26	Uncovering the analytical Saffman-Taylor finger in unstable viscous fingering and diffusion-limited aggregation. Physical Review Letters, 1989, 63, 984-987.	7.8	95
27	Firing-rate resonance in a generalized integrate-and-fire neuron with subthreshold resonance. Physical Review E, 2003, 67, 051916.	2.1	92
28	Effect of disorder on two-dimensional wetting. Journal of Statistical Physics, 1992, 66, 1189-1213.	1.2	89
29	Scaling behavior in anisotropic Hele-Shaw flow. Physical Review Letters, 1993, 71, 3461-3464.	7.8	86
30	From Discrete to Continuum Models of Three-Dimensional Deformations in Epithelial Sheets. Biophysical Journal, 2015, 109, 154-163.	0.5	84
31	Exact exponent for the number of persistent spins in the zero-temperature dynamics of the one-dimensional Potts model. Journal of Statistical Physics, 1996, 85, 763-797.	1.2	81
32	Scroll waves in isotropic excitable media: Linear instabilities, bifurcations, and restabilized states. Physical Review E, 2002, 65, 046235.	2.1	81
33	Characterization of three optional promoters in the 5' region of the human aldolase A gene. Journal of Molecular Biology, 1987, 197, 425-438.	4.2	78
34	Saffman-Taylor fingers and directional solidification at low velocity. Physical Review A, 1987, 36, 2811-2817.	2.5	68
35	Analytic theory of the Saffman-Taylor fingers. Physical Review A, 1988, 37, 1270-1283.	2.5	66
36	Single neuron dynamics and computation. Current Opinion in Neurobiology, 2014, 25, 149-155.	4.2	63

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37	Models of cluster growth on the Cayley tree. <i>Physical Review B</i> , 1984, 30, 391-399.	3.2	57
38	Six Homeoproteins and a linc-RNA at the Fast MYH Locus Lock Fast Myofiber Terminal Phenotype. <i>PLoS Genetics</i> , 2014, 10, e1004386.	3.5	56
39	Modeling the finger instability in an expanding cell monolayer. <i>Integrative Biology (United Kingdom)</i> , 2015, 7, 1218-1227.	1.3	55
40	Neuronal Morphology Generates High-Frequency Firing Resonance. <i>Journal of Neuroscience</i> , 2015, 35, 7056-7068.	3.6	55
41	Core genetic module: The mixed feedback loop. <i>Physical Review E</i> , 2005, 72, 031908.	2.1	54
42	Two-state system coupled to phonons: A renormalization-group analysis of the transition. <i>Physical Review B</i> , 1984, 30, 464-466.	3.2	50
43	The Statistics of Repeating Patterns of Cortical Activity Can Be Reproduced by a Model Network of Stochastic Binary Neurons. <i>Journal of Neuroscience</i> , 2008, 28, 10734-10745.	3.6	47
44	Genome-wide analyses of Shavenbaby target genes reveals distinct features of enhancer organization. <i>Genome Biology</i> , 2013, 14, R86.	9.6	43
45	Cerebellar learning using perturbations. <i>ELife</i> , 2018, 7, .	6.0	41
46	Linear Stability of Scroll Waves. <i>Physical Review Letters</i> , 2000, 85, 5328-5331.	7.8	40
47	Needle models of Laplacian growth. <i>Physical Review A</i> , 1992, 45, 8759-8765.	2.5	37
48	Spiral Wave Meander in Excitable Media: The Large Core Limit. <i>Physical Review Letters</i> , 1997, 79, 665-668.	7.8	37
49	Exponentially small splitting of separatrices, matching in the complex plane and Borel summation. <i>Nonlinearity</i> , 1993, 6, 57-70.	1.4	36
50	Different Cell Fates from Cell-Cell Interactions: Core Architectures of Two-Cell Bistable Networks. <i>Biophysical Journal</i> , 2012, 102, 417-426.	0.5	35
51	Analysis of a dissipative model of self-organized criticality with random neighbors. <i>Physical Review E</i> , 1997, 56, R2343-R2346.	2.1	33
52	Noise-Induced Periodic Behaviour in the Globally Coupled Complex Ginzburg-Landau Equation. <i>Europhysics Letters</i> , 1994, 27, 637-642.	2.0	31
53	MyoD reprogramming requires Six1 and Six4 homeoproteins: genome-wide <i>cis</i> -regulatory module analysis. <i>Nucleic Acids Research</i> , 2016, 44, 8621-8640.	14.5	27
54	A General Pairwise Interaction Model Provides an Accurate Description of In Vivo Transcription Factor Binding Sites. <i>PLoS ONE</i> , 2014, 9, e99015.	2.5	26

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55	Growth and forms of Laplacian aggregates. Physical Review E, 1993, 48, 1296-1304.	2.1	25
56	Collective chaos and noise in the globally coupled complex Ginzburg-Landau equation. Physica D: Nonlinear Phenomena, 1997, 103, 273-293.	2.8	25
57	Genome-wide identification of cis-regulatory motifs and modules underlying gene coregulation using statistics and phylogeny. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 14615-14620.	7.1	24
58	Time-invariant feed-forward inhibition of Purkinje cells in the cerebellar cortex <i>in vivo</i> . Journal of Physiology, 2016, 594, 2729-2749.	2.9	24
59	Sustained Rhythmic Brain Activity Underlies Visual Motion Perception in Zebrafish. Cell Reports, 2016, 17, 1098-1112.	6.4	23
60	Regulation of the multiple promoters of the human aldolase A gene: response of its two ubiquitous promoters to agents promoting cell proliferation. Nucleic Acids Research, 1991, 19, 767-774.	14.5	22
61	Nonequilibrium Ribbon Model of Twisted Scroll Waves. Physical Review Letters, 2006, 96, 098301.	7.8	21
62	Growth histories and overlap distributions of diffusion-limited-aggregation clusters. Physical Review A, 1991, 43, 888-899.	2.5	20
63	An aggregation-removal model for the formation and size determination of post-synaptic scaffold domains. PLoS Computational Biology, 2017, 13, e1005516.	3.2	19
64	Directional solidification cells at low velocities. Physical Review A, 1990, 41, 4421-4432.	2.5	18
65	Self-dilating viscous fingers in wedge-shaped Hele-Shaw cells. Physics of Fluids A, Fluid Dynamics, 1991, 3, 1687-1690.	1.6	18
66	Correlations and dynamics in ensembles of maps: Simple models. Physical Review E, 1994, 49, 2661-2667.	2.1	15
67	Imogene: identification of motifs and cis-regulatory modules underlying gene co-regulation. Nucleic Acids Research, 2014, 42, 6128-6145.	14.5	13
68	Exact results for the one dimensional asymmetric exclusion model. Physica A: Statistical Mechanics and Its Applications, 1993, 200, 25-33.	2.6	12
69	Faceted needle crystals: an analytical approach Mokhtar. Journal De Physique, I, 1994, 4, 383-391.	1.2	12
70	Synchronization, Stochasticity, and Phase Waves in Neuronal Networks With Spatially-Structured Connectivity. Frontiers in Computational Neuroscience, 2020, 14, 569644.	2.1	10
71	Self-dilating viscous fingers in wedge-shaped Hele-Shaw cells. Physics of Fluids A, Fluid Dynamics, 1991, 3, 2039-2042.	1.6	9
72	Superfluidity at Supersonic Speed?. Physical Review Letters, 2001, 87, 218901.	7.8	8

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73	Reciprocal stabilization of glycine receptors and gephyrin scaffold proteins at inhibitory synapses. Biophysical Journal, 2021, 120, 805-817.	0.5	8
74	Lifetime of a structure evolving by cluster aggregation and particle loss, and application to postsynaptic scaffold domains. Physical Review E, 2020, 101, 012411.	2.1	6
75	On the fractal characteristics of the \hat{I} -model. Physica A: Statistical Mechanics and Its Applications, 1992, 191, 123-127.	2.6	5
76	Giant vortices in the Ginzburg-Landau description of superconductivity. Physical Review B, 2001, 64, .	3.2	4
77	Coarsening in the 1D Ising model evolving with Swendsen - Wang dynamics: an unusual scaling. Journal of Physics A, 1996, 29, L589-L594.	1.6	2
78	Computation of Transcendental Effects in Growth Problems: Linear Solvability Conditions and Nonlinear Methods-The Example of the Geometric Model. NATO ASI Series Series B: Physics, 1991, , 15-28.	0.2	2
79	Diffusion-controlled interface dynamics. Physics Reports, 1989, 184, 259-264.	25.6	1
80	Shapes and dynamics of Laplacian growth. NATO ASI Series Series B: Physics, 1995, , 63-83.	0.2	1
81	Population Density Models. , 2013, , 1-24.		0
82	Fokker-Planck Equation. , 2013, , 1-6.		0
83	From growing bubbles and dendrites to biological forms. Comptes Rendus - Mecanique, 2020, 348, 627-636.	0.7	0
84	Neuronal Dynamics. , 2009, , 495-516.		0
85	Fokker-Planck Equation. , 2022, , 1460-1464.		0
86	Population Density Model. , 2022, , 2846-2865.		0