

James P Sethna

List of Publications by Citations

Source: <https://exaly.com/author-pdf/1976771/james-p-sethna-publications-by-citations.pdf>

Version: 2024-04-24

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

76
papers

5,769
citations

34
h-index

75
g-index

82
ext. papers

6,685
ext. citations

7.1
avg, IF

5.63
L-index

#	Paper	IF	Citations
76	Crackling noise. <i>Nature</i> , 2001 , 410, 242-50	50.4	836
75	Universally sloppy parameter sensitivities in systems biology models. <i>PLoS Computational Biology</i> , 2007 , 3, 1871-78	5	774
74	Hysteresis and hierarchies: Dynamics of disorder-driven first-order phase transformations. <i>Physical Review Letters</i> , 1993 , 70, 3347-3350	7.4	540
73	Statistical mechanical approaches to models with many poorly known parameters. <i>Physical Review E</i> , 2003 , 68, 021904	2.4	232
72	Avalanches, Barkhausen noise, and plain old criticality. <i>Physical Review Letters</i> , 1995 , 75, 4528-4531	7.4	218
71	Hysteresis, avalanches, and disorder-induced critical scaling: A renormalization-group approach. <i>Physical Review B</i> , 1996 , 53, 14872-14905	3.3	196
70	The statistical mechanics of complex signaling networks: nerve growth factor signaling. <i>Physical Biology</i> , 2004 , 1, 184-95	3	174
69	Imaging atomic rearrangements in two-dimensional silica glass: watching silica dance. <i>Science</i> , 2013 , 342, 224-7	33.3	162
68	Universality beyond power laws and the average avalanche shape. <i>Nature Physics</i> , 2011 , 7, 316-320	16.2	155
67	Perspective: Sloppiness and emergent theories in physics, biology, and beyond. <i>Journal of Chemical Physics</i> , 2015 , 143, 010901	3.9	151
66	Parameter space compression underlies emergent theories and predictive models. <i>Science</i> , 2013 , 342, 604-7	33.3	146
65	Disorder-induced critical phenomena in hysteresis: Numerical scaling in three and higher dimensions. <i>Physical Review B</i> , 1999 , 59, 6106-6119	3.3	145
64	Sloppiness, robustness, and evolvability in systems biology. <i>Current Opinion in Biotechnology</i> , 2008 , 19, 389-95	11.4	130
63	Noise in disordered systems: The power spectrum and dynamic exponents in avalanche models. <i>Physical Review B</i> , 2000 , 62, 11699-11708	3.3	113
62	Why are nonlinear fits to data so challenging?. <i>Physical Review Letters</i> , 2010 , 104, 060201	7.4	107
61	Zero-temperature hysteresis in the random-field Ising model on a Bethe lattice. <i>Journal of Physics A</i> , 1997 , 30, 5259-5267		100
60	Critical Casimir forces in cellular membranes. <i>Physical Review Letters</i> , 2012 , 109, 138101	7.4	91

59	The potential of atomistic simulations and the knowledgebase of interatomic models. <i>Jom</i> , 2011 , 63, 17-17	2.1	91
58	Geometry of nonlinear least squares with applications to sloppy models and optimization. <i>Physical Review E</i> , 2011 , 83, 036701	2.4	85
57	Bayesian ensemble approach to error estimation of interatomic potentials. <i>Physical Review Letters</i> , 2004 , 93, 165501	7.4	84
56	Sloppy-model universality class and the Vandermonde matrix. <i>Physical Review Letters</i> , 2006 , 97, 150601	7.4	82
55	Block copolymer self-assembly-directed synthesis of mesoporous gyroidal superconductors. <i>Science Advances</i> , 2016 , 2, e1501119	14.3	81
54	From damage percolation to crack nucleation through finite size criticality. <i>Physical Review Letters</i> , 2013 , 110, 185505	7.4	77
53	Microscopic theory of glassy disordered crystals: $(\text{KBr})_{1-x}(\text{KCN})_x$. <i>Phase Transitions</i> , 1985 , 5, 317-339	1.3	68
52	Optimal experimental design in an epidermal growth factor receptor signalling and down-regulation model. <i>IET Systems Biology</i> , 2007 , 1, 190-202	1.4	54
51	Rate Theory for Correlated Processes: Double Jumps in Adatom Diffusion. <i>Physical Review Letters</i> , 1997 , 79, 2843-2846	7.4	50
50	Scaling ansatz for the jamming transition. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, 9745-50	11.5	49
49	Temperature dependence of the superheating field for superconductors in the high-London limit. <i>Physical Review B</i> , 2008 , 78,	3.3	46
48	Deformation of Crystals: Connections with Statistical Physics. <i>Annual Review of Materials Research</i> , 2017 , 47, 217-246	12.8	41
47	Superheating field of superconductors within Ginzburg-Landau theory. <i>Physical Review B</i> , 2011 , 83,	3.3	40
46	Emergent $\text{SO}(3)$ Symmetry of the Frictionless Shear Jamming Transition. <i>Journal of Statistical Physics</i> , 2017 , 167, 735-748	1.5	37
45	Elastic Theory Has Zero Radius of Convergence. <i>Physical Review Letters</i> , 1996 , 77, 1520-1523	7.4	37
44	Statistical mechanics of cracks: Fluctuations, breakdown, and asymptotics of elastic theory. <i>Physical Review E</i> , 1997 , 55, 7669-7690	2.4	35
43	Extracting falsifiable predictions from sloppy models. <i>Annals of the New York Academy of Sciences</i> , 2007 , 1115, 203-11	6.5	34
42	Spheric domains in smectic liquid crystals. <i>Physical Review A</i> , 1982 , 26, 3037-3040	2.6	33

41	Scaling theory of continuum dislocation dynamics in three dimensions: Self-organized fractal pattern formation. <i>International Journal of Plasticity</i> , 2013 , 46, 94-129	7.6	29
40	. <i>Computing in Science and Engineering</i> , 2007 , 9, 34-37	1.5	27
39	Overshoot during phenotypic switching of cancer cell populations. <i>Scientific Reports</i> , 2015 , 5, 15464	4.9	26
38	Fracture Strength: Stress Concentration, Extreme Value Statistics, and the Fate of the Weibull Distribution. <i>Physical Review Applied</i> , 2014 , 2,	4.3	26
37	Measuring nonlinear stresses generated by defects in 3D colloidal crystals. <i>Nature Materials</i> , 2016 , 15, 1172-1176	27	25
36	Theoretical estimates of maximum fields in superconducting resonant radio frequency cavities: stability theory, disorder, and laminates. <i>Superconductor Science and Technology</i> , 2017 , 30, 033002	3.1	23
35	Avalanche spatial structure and multivariable scaling functions: sizes, heights, widths, and views through windows. <i>Physical Review E</i> , 2011 , 84, 061103	2.4	22
34	Glassy Crystals Low-frequency and Low-temperature Properties a. <i>Annals of the New York Academy of Sciences</i> , 1986 , 484, 130-149	6.5	20
33	Random-Field Ising Models of Hysteresis 2006 , 107-179		19
32	Morphology of renormalization-group flow for the de Almeida-Thouless-Gardner universality class. <i>Physical Review E</i> , 2019 , 99, 022132	2.4	18
31	Mechanical properties of growing melanocytic nevi and the progression to melanoma. <i>PLoS ONE</i> , 2014 , 9, e94229	3.7	17
30	Pinning Susceptibility: The Effect of Dilute, Quenched Disorder on Jamming. <i>Physical Review Letters</i> , 2016 , 116, 235501	7.4	16
29	Shielding Superconductors with Thin Films as Applied to rf Cavities for Particle Accelerators. <i>Physical Review Applied</i> , 2015 , 4,	4.3	15
28	Comment on "Sloppy models, parameter uncertainty, and the role of experimental design". <i>Molecular BioSystems</i> , 2011 , 7, 2522; author reply 2523-4		14
27	Disorder-driven first-order phase transformations: A model for hysteresis. <i>Journal of Applied Physics</i> , 1994 , 75, 5946-5948	2.5	13
26	Vortex Dynamics and Losses Due to Pinning: Dissipation from Trapped Magnetic Flux in Resonant Superconducting Radio-Frequency Cavities. <i>Physical Review Applied</i> , 2018 , 10,	4.3	12
25	A KIM-compliant potfit for fitting sloppy interatomic potentials: application to the EDIP model for silicon. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017 , 25, 014001	2	11
24	Computation of a Theoretical Membrane Phase Diagram and the Role of Phase in Lipid-Raft-Mediated Protein Organization. <i>Journal of Physical Chemistry B</i> , 2018 , 122, 3500-3513	3.4	10

23	Yield Precursor Dislocation Avalanches in Small Crystals: The Irreversibility Transition. <i>Physical Review Letters</i> , 2019 , 123, 035501	7.4	10
22	You can run, you can hide: The epidemiology and statistical mechanics of zombies. <i>Physical Review E</i> , 2015 , 92, 052801	2.4	9
21	Improved magnetic information storage using return-point memory. <i>Journal of Applied Physics</i> , 1997 , 81, 1590-1597	2.5	9
20	Course 6 Crackling noise and avalanches: Scaling, critical phenomena, and the renormalization group. <i>Les Houches Summer School Proceedings</i> , 2007 , 85, 257-288		9
19	Light Microscopy at Maximal Precision. <i>Physical Review X</i> , 2017 , 7,	9.1	8
18	Cluster representations and the Wolff algorithm in arbitrary external fields. <i>Physical Review E</i> , 2018 , 98,	2.4	8
17	Structural susceptibility and separation of time scales in the van der Pol oscillator. <i>Physical Review E</i> , 2012 , 86, 026712	2.4	7
16	Weirdest Martensite: Smectic Liquid Crystal Microstructure and Weyl-Poincaré Invariance. <i>Physical Review Letters</i> , 2016 , 116, 147802	7.4	6
15	Ginzburg-Landau theory of the superheating field anisotropy of layered superconductors. <i>Physical Review B</i> , 2016 , 94,	3.3	6
14	Visualization, coarsening, and flow dynamics of focal conic domains in simulated smectic-A liquid crystals. <i>Physical Review E</i> , 2015 , 92, 062511	2.4	6
13	Persistent infrared spectral hole burning of NO ₂ ions in potassium halide crystals. I. Principle and satellite hole generation. <i>Journal of Chemical Physics</i> , 1991 , 95, 8816-8842	3.9	6
12	Normal Form for Renormalization Groups. <i>Physical Review X</i> , 2019 , 9,	9.1	5
11	Crossover behavior in interface depinning. <i>Physical Review E</i> , 2015 , 92, 022146	2.4	5
10	A generalization of the theory of normal forms. <i>Journal of Nonlinear Science</i> , 1996 , 6, 499-506	2.8	5
9	Materials science. Crackling wires. <i>Science</i> , 2007 , 318, 207-8	33.3	4
8	Visualizing probabilistic models and data with Intensive Principal Component Analysis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 13762-13767	11.5	2
7	Unusual scaling for two-dimensional avalanches: Curing the faceting and scaling in the lower critical dimension. <i>Physical Review Research</i> , 2019 , 1,	3.9	2
6	The OpenKIM processing pipeline: A cloud-based automatic material property computation engine.. <i>Journal of Chemical Physics</i> , 2020 , 153, 064104	3.9	2

5	Analysis of magnetic vortex dissipation in Sn-segregated boundaries in Nb ₃ Sn superconducting RF cavities. <i>Physical Review B</i> , 2021 , 103,	3-3	2
4	Chebyshev Approximation and the Global Geometry of Model Predictions. <i>Physical Review Letters</i> , 2019 , 122, 158302	7-4	1
3	Dislocation Mobility in Two-Dimensional Lennard-Jones Material. <i>Materials Research Society Symposia Proceedings</i> , 1999 , 578, 249		1
2	Canonical sectors and evolution of firms in the US stock markets. <i>Quantitative Finance</i> , 2018 , 18, 1619-1634		1
1	Microscopic Estimates for Electromigration Velocities of Intragranular Voids in Thin Aluminum Lines. <i>Materials Research Society Symposia Proceedings</i> , 1996 , 428, 171		