

Boris I Shraiman

List of Publications by Year in Descending Order

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

93
papers

14,761
citations

55
h-index

100
g-index

100
ext. papers

16,226
ext. citations

10
avg. IF

6.46
L-index

#	Paper	IF	Citations
93	Sector search strategies for odor trail tracking.. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022 , 119,	11.5	1
92	Human neural tube morphogenesis in vitro by geometric constraints. <i>Nature</i> , 2021 , 599, 268-272	50.4	14
91	Fluctuations can induce local nematic order and extensile stress in monolayers of motile cells. <i>Soft Matter</i> , 2021 , 17, 3068-3073	3.6	2
90	A variational method for image-based inference of internal stress in epithelial tissues. <i>Physical Review X</i> , 2020 , 10,	9.1	6
89	Phylogenetic theory of persistence, extinction and speciation of rapidly adapting pathogens. <i>ELife</i> , 2019 , 8,	8.9	11
88	Global morphogenetic flow is accurately predicted by the spatial distribution of myosin motors. <i>ELife</i> , 2018 , 7,	8.9	71
87	Active Tension Network model suggests an exotic mechanical state realized in epithelial tissues. <i>Nature Physics</i> , 2017 , 13, 1221-1226	16.2	46
86	Mechanical control of growth: ideas, facts and challenges. <i>Development (Cambridge)</i> , 2017 , 144, 4238-4248	16.2	46
85	Polygenicity and Epistasis Underlie Fitness-Proximal Traits in the Multiparental Experimental Evolution (CeMEE) Panel. <i>Genetics</i> , 2017 , 207, 1663-1685	4	32
84	Inferring Cell-State Transition Dynamics from Lineage Trees and Endpoint Single-Cell Measurements. <i>Cell Systems</i> , 2016 , 3, 419-433.e8	10.6	43
83	Differential growth triggers mechanical feedback that elevates Hippo signaling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, E6974-E6983	11.5	85
82	Prediction, dynamics, and visualization of antigenic phenotypes of seasonal influenza viruses. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016 , 113, E1701-9	11.5	116
81	Leaf growth is conformal. <i>Physical Biology</i> , 2016 , 13, 05LT01	3	10
80	Inferring epigenetic dynamics from kin correlations. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, E2281-9	11.5	14
79	Predicting evolution from the shape of genealogical trees. <i>ELife</i> , 2014 , 3,	8.9	108
78	How to infer relative fitness from a sample of genomic sequences. <i>Genetics</i> , 2014 , 197, 913-23	4	12
77	Evolutionary dynamics and statistical physics. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2013 , 2013, N01001	1.9	5

76	Collective polarization model for gradient sensing via Dachsous-Fat intercellular signaling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 20420-5	11.5	25
75	Coalescence and genetic diversity in sexual populations under selection. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 15836-41	11.5	39
74	Emergence of clones in sexual populations. <i>Journal of Statistical Mechanics: Theory and Experiment</i> , 2013 , 2013, P01008	1.9	12
73	Dynamic mutation-selection balance as an evolutionary attractor. <i>Genetics</i> , 2012 , 191, 1309-19	4	63
72	Collective and single cell behavior in epithelial contact inhibition. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 739-44	11.5	279
71	Mechanical stress inference for two dimensional cell arrays. <i>PLoS Computational Biology</i> , 2012 , 8, e1002512	10.5	108
70	Fluctuations of fitness distributions and the rate of Muller's ratchet. <i>Genetics</i> , 2012 , 191, 1283-93	4	39
69	Statistical genetics and evolution of quantitative traits. <i>Reviews of Modern Physics</i> , 2011 , 83, 1283-1300	40.5	63
68	A dynamical model of ommatidial crystal formation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011 , 108, 11145-50	11.5	49
67	Epistasis in a model of molecular signal transduction. <i>PLoS Computational Biology</i> , 2011 , 7, e1001134	5	13
66	Correlated evolution of nearby residues in Drosophilid proteins. <i>PLoS Genetics</i> , 2011 , 7, e1001315	6	35
65	MicroRNA profiling reveals two distinct p53-related human pluripotent stem cell states. <i>Cell Stem Cell</i> , 2010 , 7, 671-81	18	84
64	Order and stochastic dynamics in Drosophila planar cell polarity. <i>PLoS Computational Biology</i> , 2009 , 5, e1000628	5	55
63	Competition between recombination and epistasis can cause a transition from allele to genotype selection. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 6866-71	11.5	70
62	Emergent gene order in a model of modular polyketide synthases. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009 , 106, 19410-5	11.5	26
61	Systems analysis of the single photon response in invertebrate photoreceptors. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2008 , 105, 10354-9	11.5	26
60	Phototaxis as a strategy for searching without gradients. <i>Nature</i> , 2007 , 445, 406-9	50.4	479
59	On the mechanism of wing size determination in fly development. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007 , 104, 3835-40	11.5	282

58	Detection of a microRNA signal in an in vivo expression set of mRNAs. <i>PLoS ONE</i> , 2007 , 2, e804	3.7	55
57	On the role of glypicans in the process of morphogen gradient formation. <i>Developmental Biology</i> , 2006 , 300, 512-22	3.1	50
56	G-protein-coupled enzyme cascades have intrinsic properties that improve signal localization and fidelity. <i>Biophysical Journal</i> , 2005 , 88, 3063-71	2.9	14
55	The tale of two RNA polymerases: transcription profiling and gene expression strategy of bacteriophage Xp10. <i>Molecular Microbiology</i> , 2005 , 55, 764-77	4.1	25
54	Mechanical feedback as a possible regulator of tissue growth. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005 , 102, 3318-23	11.5	417
53	Multistability in the lactose utilization network of Escherichia coli. <i>Nature</i> , 2004 , 427, 737-40	50.4	800
52	A model for velocity fluctuations in sedimentation. <i>Journal of Fluid Mechanics</i> , 2004 , 501, 71-104	3.7	103
51	A biophysical approach to transcription factor binding site discovery. <i>Genome Research</i> , 2003 , 13, 2381-90	9.7	154
50	Lagrangian Particle Approach to Large Eddy Simulations of Hydrodynamic Turbulence. <i>Journal of Statistical Physics</i> , 2003 , 113, 693-700	1.5	10
49	Metabolic switching in the sugar phosphotransferase system of Escherichia coli. <i>Biophysical Journal</i> , 2003 , 85, 744-54	2.9	45
48	Assigning numbers to the arrows: parameterizing a gene regulation network by using accurate expression kinetics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 10555-60	11.5	413
47	Specificity and robustness in transcription control networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 2072-7	11.5	68
46	Olfactory search at high Reynolds number. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 12589-93	11.5	97
45	Towards the clarity limit in optical fibre. <i>Nature</i> , 2000 , 404, 262-4	50.4	104
44	Scalar turbulence. <i>Nature</i> , 2000 , 405, 639-46	50.4	553
43	Geometry of Lagrangian dispersion in turbulence. <i>Physical Review Letters</i> , 2000 , 85, 5324-7	7.4	80
42	Engineering aspects of enzymatic signal transduction: photoreceptors in the retina. <i>Biophysical Journal</i> , 2000 , 79, 2801-17	2.9	119
41	Turbulent mixing of a passive scalar. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999 , 263, 95-103	3.3	3

40	Intergrain Magnetoresistance via Second-Order Tunneling in Perovskite Manganites. <i>Physical Review Letters</i> , 1999 , 82, 4508-4511	7.4	179
39	The role of nonlinear dynamics of the syrinx in the vocalizations of a songbird. <i>Nature</i> , 1998 , 395, 67-71	50.4	196
38	Structures and Multipoint Correlators for Turbulent Advection: Predictions and Experiments. <i>Physical Review Letters</i> , 1998 , 81, 4373-4376	7.4	39
37	Anomalous scaling for a passive scalar near the Batchelor limit. <i>Physical Review E</i> , 1998 , 57, 2965-2977	2.4	22
36	Perturbation theory for the ϵ -correlated model of passive scalar advection near the Batchelor limit. <i>Physical Review E</i> , 1997 , 55, R1263-R1266	2.4	50
35	On the role of assembly kinetics in determining the structure of clathrin cages. <i>Biophysical Journal</i> , 1997 , 72, 953-7	2.9	24
34	Assembly of ordered colloidal aggregates by electric-field-induced fluid flow. <i>Nature</i> , 1997 , 386, 57-59	50.4	287
33	Fermi-liquid-to-polaron crossover. II. Double exchange and the physics of colossal magnetoresistance. <i>Physical Review B</i> , 1996 , 54, 5405-5417	3.3	337
32	Dynamic Jahn-Teller Effect and Colossal Magnetoresistance in $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$. <i>Physical Review Letters</i> , 1996 , 77, 175-178	7.4	1188
31	High Rayleigh number convection and passive scalar mixing. <i>Physica D: Nonlinear Phenomena</i> , 1996 , 97, 286-290	3.3	5
30	Symmetry and Scaling of Turbulent Mixing. <i>Physical Review Letters</i> , 1996 , 77, 2463-2466	7.4	63
29	Fermi-liquid-to-polaron crossover. I. General results. <i>Physical Review B</i> , 1996 , 54, 5389-5404	3.3	208
28	Persistent small scale anisotropy in homogeneous shear flows. <i>Physical Review Letters</i> , 1995 , 75, 3114-3117	7.4	95
27	Lagrangian path integrals and fluctuations in random flow. <i>Physical Review E</i> , 1994 , 49, 2912-2927	2.4	161
26	Curie and non-Curie behavior of impurity spins in quantum antiferromagnets. <i>Physical Review B</i> , 1993 , 48, 7070-7076	3.3	60
25	Shastry, Shraiman, and Singh reply. <i>Physical Review Letters</i> , 1993 , 71, 2838	7.4	8
24	Faraday rotation and the Hall constant in strongly correlated Fermi systems. <i>Physical Review Letters</i> , 1993 , 70, 2004-2007	7.4	76
23	Theory of optical absorption by a localized carrier in an antiferromagnetic insulator. <i>Physical Review B</i> , 1992 , 46, 14834-14841	3.3	5

22	Vortex morphology and Kelvin's theorem. <i>Physical Review A</i> , 1992 , 45, R5351-R5354	2.6	27
21	Excitation spectrum of the spiral state of a doped antiferromagnet. <i>Physical Review B</i> , 1992 , 46, 8305-8313	3.3	38
20	Exponential tails and random advection. <i>Physical Review Letters</i> , 1991 , 66, 2984-2987	7.4	93
19	Theory of Raman scattering in Mott-Hubbard systems. <i>Physical Review Letters</i> , 1990 , 65, 1068-1071	7.4	229
18	Mobile vacancy in a quantum antiferromagnet: Effective Hamiltonian. <i>Physical Review B</i> , 1990 , 42, 2485-2500	3.3	80
17	Ground state of a mobile vacancy in a quantum antiferromagnet: Small-cluster study. <i>Physical Review B</i> , 1990 , 41, 6715-6723	3.3	66
16	Heat transport in high-Rayleigh-number convection. <i>Physical Review A</i> , 1990 , 42, 3650-3653	2.6	326
15	Mean-field theory for vacancies in a quantum antiferromagnet. <i>Physical Review B</i> , 1989 , 40, 9162-9166	3.3	58
14	Spiral phase of a doped quantum antiferromagnet. <i>Physical Review Letters</i> , 1989 , 62, 1564-1567	7.4	351
13	Chaotic behavior of an extended system. <i>Physica D: Nonlinear Phenomena</i> , 1989 , 37, 109-115	3.3	135
12	Nonadiabatic effects in convection. <i>Physical Review A</i> , 1988 , 38, 5461-5464	2.6	93
11	Two-particle excitations in antiferromagnetic insulators. <i>Physical Review Letters</i> , 1988 , 60, 740-743	7.4	270
10	Mobile vacancies in a quantum Heisenberg antiferromagnet. <i>Physical Review Letters</i> , 1988 , 61, 467-470	7.4	357
9	Diffusive transport in a Rayleigh-Bénard convection cell. <i>Physical Review A</i> , 1987 , 36, 261-267	2.6	127
8	Fractal measures and their singularities: The characterization of strange sets. <i>Physical Review A</i> , 1986 , 33, 1141-1151	2.6	2772
7	Velocity selection and the Saffman-Taylor problem. <i>Physical Review Letters</i> , 1986 , 56, 2028-2031	7.4	181
6	Order, disorder, and phase turbulence. <i>Physical Review Letters</i> , 1986 , 57, 325-328	7.4	77
5	Viscous flows in two dimensions. <i>Reviews of Modern Physics</i> , 1986 , 58, 977-999	40.5	613

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| 4 | Scaling Laws for Mode Lockings in Circle Maps. <i>Physica Scripta</i> , 1985 , 32, 263-270 | 2.6 | 86 |
| 3 | Transition from quasiperiodicity to chaos: A perturbative renormalization-group approach. <i>Physical Review A</i> , 1984 , 29, 3464-3466 | 2.6 | 17 |
| 2 | Two-dimensional XY magnets with random Dzyaloshinskii-Moriya interactions. <i>Physical Review B</i> , 1983 , 27, 1800-1811 | 3.3 | 108 |
| 1 | Scaling Theory for Noisy Period-Doubling Transitions to Chaos. <i>Physical Review Letters</i> , 1981 , 46, 935-939 | 7.4 | 174 |