

Boris I Shraiman

List of Publications by Year in descending order

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94
papers

17,314
citations

26567

56
h-index

39575

94
g-index

100
all docs

100
docs citations

100
times ranked

12516
citing authors

#	ARTICLE	IF	CITATIONS
1	Sector search strategies for odor trail tracking. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	11
2	Visceral organ morphogenesis via calcium-patterned muscle constrictions. ELife, 2022, 11, .	2.8	17
3	Fluctuations can induce local nematic order and extensile stress in monolayers of motile cells. Soft Matter, 2021, 17, 3068-3073.	1.2	9
4	Human neural tube morphogenesis in vitro by geometric constraints. Nature, 2021, 599, 268-272.	13.7	107
5	Variational Method for Image-Based Inference of Internal Stress in Epithelial Tissues. Physical Review X, 2020, 10, .	2.8	11
6	Phylogenetic theory of persistence, extinction and speciation of rapidly adapting pathogens. ELife, 2019, 8, .	2.8	30
7	Global morphogenetic flow is accurately predicted by the spatial distribution of myosin motors. ELife, 2018, 7, .	2.8	146
8	Active tension network model suggests an exotic mechanical state realized in epithelial tissues. Nature Physics, 2017, 13, 1221-1226.	6.5	73
9	Mechanical control of growth: ideas, facts and challenges. Development (Cambridge), 2017, 144, 4238-4248.	1.2	92
10	Polygenicity and Epistasis Underlie Fitness-Proximal Traits in the <i>Caenorhabditis elegans</i> Multiparental Experimental Evolution (CeMEE) Panel. Genetics, 2017, 207, 1663-1685.	1.2	81
11	Leaf growth is conformal. Physical Biology, 2016, 13, 05LT01.	0.8	13
12	Inferring Cell-State Transition Dynamics from Lineage Trees and Endpoint Single-Cell Measurements. Cell Systems, 2016, 3, 419-433.e8.	2.9	79
13	Differential growth triggers mechanical feedback that elevates Hippo signaling. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6974-E6983.	3.3	124
14	Prediction, dynamics, and visualization of antigenic phenotypes of seasonal influenza viruses. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E1701-9.	3.3	165
15	Inferring epigenetic dynamics from kin correlations. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E2281-9.	3.3	25
16	Predicting evolution from the shape of genealogical trees. ELife, 2014, 3, .	2.8	159
17	How to Infer Relative Fitness from a Sample of Genomic Sequences. Genetics, 2014, 197, 913-923.	1.2	21
18	Evolutionary dynamics and statistical physics. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, N01001.	0.9	8

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19	Collective polarization model for gradient sensing via Dachsous-Fat intercellular signaling. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 20420-20425.	3.3	31
20	Coalescence and genetic diversity in sexual populations under selection. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 15836-15841.	3.3	60
21	Emergence of clones in sexual populations. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, P01008.	0.9	16
22	Mechanical Stress Inference for Two Dimensional Cell Arrays. PLoS Computational Biology, 2012, 8, e1002512.	1.5	135
23	Fluctuations of Fitness Distributions and the Rate of Muller's Ratchet. Genetics, 2012, 191, 1283-1293.	1.2	63
24	Dynamic Mutation-Selection Balance as an Evolutionary Attractor. Genetics, 2012, 191, 1309-1319.	1.2	96
25	Collective and single cell behavior in epithelial contact inhibition. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 739-744.	3.3	374
26	Statistical genetics and evolution of quantitative traits. Reviews of Modern Physics, 2011, 83, 1283-1300.	16.4	87
27	A dynamical model of ommatidial crystal formation. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11145-11150.	3.3	62
28	Epistasis in a Model of Molecular Signal Transduction. PLoS Computational Biology, 2011, 7, e1001134.	1.5	14
29	Correlated Evolution of Nearby Residues in Drosophilid Proteins. PLoS Genetics, 2011, 7, e1001315.	1.5	48
30	MicroRNA Profiling Reveals Two Distinct p53-Related Human Pluripotent Stem Cell States. Cell Stem Cell, 2010, 7, 671-681.	5.2	98
31	Order and Stochastic Dynamics in Drosophila Planar Cell Polarity. PLoS Computational Biology, 2009, 5, e1000628.	1.5	61
32	Competition between recombination and epistasis can cause a transition from allele to genotype selection. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 6866-6871.	3.3	99
33	Emergent gene order in a model of modular polyketide synthases. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 19410-19415.	3.3	30
34	Systems analysis of the single photon response in invertebrate photoreceptors. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 10354-10359.	3.3	30
35	On the mechanism of wing size determination in fly development. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 3835-3840.	3.3	327
36	Infotaxis as a strategy for searching without gradients. Nature, 2007, 445, 406-409.	13.7	653

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37	Detection of a MicroRNA Signal in an In Vivo Expression Set of mRNAs. PLoS ONE, 2007, 2, e804.	1.1	61
38	On the role of glypicans in the process of morphogen gradient formation. Developmental Biology, 2006, 300, 512-522.	0.9	53
39	Mechanical feedback as a possible regulator of tissue growth. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 3318-3323.	3.3	533
40	G-Protein-Coupled Enzyme Cascades Have Intrinsic Properties that Improve Signal Localization and Fidelity. Biophysical Journal, 2005, 88, 3063-3071.	0.2	17
41	The tale of two RNA polymerases: transcription profiling and gene expression strategy of bacteriophage Xp10. Molecular Microbiology, 2004, 55, 764-777.	1.2	29
42	Multistability in the lactose utilization network of Escherichia coli. Nature, 2004, 427, 737-740.	13.7	932
43	A model for velocity fluctuations in sedimentation. Journal of Fluid Mechanics, 2004, 501, 71-104.	1.4	118
44	Lagrangian Particle Approach to Large Eddy Simulations of Hydrodynamic Turbulence. Journal of Statistical Physics, 2003, 113, 693-700.	0.5	10
45	Metabolic Switching in the Sugar Phosphotransferase System of Escherichia coli. Biophysical Journal, 2003, 85, 744-754.	0.2	55
46	A Biophysical Approach to Transcription Factor Binding Site Discovery. Genome Research, 2003, 13, 2381-2390.	2.4	179
47	Assigning numbers to the arrows: Parameterizing a gene regulation network by using accurate expression kinetics. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 10555-10560.	3.3	479
48	Specificity and robustness in transcription control networks. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 2072-2077.	3.3	76
49	Olfactory search at high Reynolds number. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 12589-12593.	3.3	114
50	Towards the clarity limit in optical fibre. Nature, 2000, 404, 262-264.	13.7	132
51	Scalar turbulence. Nature, 2000, 405, 639-646.	13.7	639
52	Geometry of Lagrangian Dispersion in Turbulence. Physical Review Letters, 2000, 85, 5324-5327.	2.9	87
53	Engineering Aspects of Enzymatic Signal Transduction: Photoreceptors in the Retina. Biophysical Journal, 2000, 79, 2801-2817.	0.2	136
54	Turbulent mixing of a passive scalar. Physica A: Statistical Mechanics and Its Applications, 1999, 263, 95-103.	1.2	3

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55	Intergrain Magnetoresistance via Second-Order Tunneling in Perovskite Manganites. <i>Physical Review Letters</i> , 1999, 82, 4508-4511.	2.9	190
56	The role of nonlinear dynamics of the syrinx in the vocalizations of a songbird. <i>Nature</i> , 1998, 395, 67-71.	13.7	217
57	Structures and Multipoint Correlators for Turbulent Advection: Predictions and Experiments. <i>Physical Review Letters</i> , 1998, 81, 4373-4376.	2.9	39
58	Anomalous scaling for a passive scalar near the Batchelor limit. <i>Physical Review E</i> , 1998, 57, 2965-2977.	0.8	23
59	Perturbation theory for the $\hat{\nu}$ -correlated model of passive scalar advection near the Batchelor limit. <i>Physical Review E</i> , 1997, 55, R1263-R1266.	0.8	53
60	On the Role of Assembly Kinetics in Determining the Structure of Clathrin Cages. <i>Biophysical Journal</i> , 1997, 72, 953-957.	0.2	26
61	Assembly of ordered colloidal aggregates by electric-field-induced fluid flow. <i>Nature</i> , 1997, 386, 57-59.	13.7	348
62	Fermi-liquid-to-polaron crossover. II. Double exchange and the physics of colossal magnetoresistance. <i>Physical Review B</i> , 1996, 54, 5405-5417.	1.1	354
63	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.	2.9	1,297
64	High Rayleigh number convection and passive scalar mixing. <i>Physica D: Nonlinear Phenomena</i> , 1996, 97, 286-290.	1.3	5
65	Symmetry and Scaling of Turbulent Mixing. <i>Physical Review Letters</i> , 1996, 77, 2463-2466.	2.9	71
66	Fermi-liquid-to-polaron crossover. I. General results. <i>Physical Review B</i> , 1996, 54, 5389-5404.	1.1	218
67	Persistent Small Scale Anisotropy in Homogeneous Shear Flows. <i>Physical Review Letters</i> , 1995, 75, 3114-3117.	2.9	101
68	Lagrangian path integrals and fluctuations in random flow. <i>Physical Review E</i> , 1994, 49, 2912-2927.	0.8	180
69	Curie and non-Curie behavior of impurity spins in quantum antiferromagnets. <i>Physical Review B</i> , 1993, 48, 7070-7076.	1.1	62
70	Shastry, Shraiman, and Singh reply. <i>Physical Review Letters</i> , 1993, 71, 2838-2838.	2.9	8
71	Faraday rotation and the Hall constant in strongly correlated Fermi systems. <i>Physical Review Letters</i> , 1993, 70, 2004-2007.	2.9	83
72	Theory of optical absorption by a localized carrier in an antiferromagnetic insulator. <i>Physical Review B</i> , 1992, 46, 14834-14841.	1.1	5

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73	Vortex morphology and Kelvin's theorem. <i>Physical Review A</i> , 1992, 45, R5351-R5354.	1.0	29
74	Excitation spectrum of the spiral state of a doped antiferromagnet. <i>Physical Review B</i> , 1992, 46, 8305-8311.	1.1	43
75	Exponential tails and random advection. <i>Physical Review Letters</i> , 1991, 66, 2984-2987.	2.9	110
76	Theory of Raman scattering in Mott-Hubbard systems. <i>Physical Review Letters</i> , 1990, 65, 1068-1071.	2.9	258
77	Mobile vacancy in a quantum antiferromagnet: Effective Hamiltonian. <i>Physical Review B</i> , 1990, 42, 2485-2500.	1.1	85
78	Ground state of a mobile vacancy in a quantum antiferromagnet: Small-cluster study. <i>Physical Review B</i> , 1990, 41, 6715-6723.	1.1	68
79	Heat transport in high-Rayleigh-number convection. <i>Physical Review A</i> , 1990, 42, 3650-3653.	1.0	394
80	Mean-field theory for vacancies in a quantum antiferromagnet. <i>Physical Review B</i> , 1989, 40, 9162-9166.	1.1	62
81	Spiral phase of a doped quantum antiferromagnet. <i>Physical Review Letters</i> , 1989, 62, 1564-1567.	2.9	385
82	Chaotic behavior of an extended system. <i>Physica D: Nonlinear Phenomena</i> , 1989, 37, 109-115.	1.3	146
83	Nonadiabatic effects in convection. <i>Physical Review A</i> , 1988, 38, 5461-5464.	1.0	96
84	Two-particle excitations in antiferromagnetic insulators. <i>Physical Review Letters</i> , 1988, 60, 740-743.	2.9	287
85	Mobile Vacancies in a Quantum Heisenberg Antiferromagnet. <i>Physical Review Letters</i> , 1988, 61, 467-470.	2.9	383
86	Diffusive transport in a Rayleigh-Bénard convection cell. <i>Physical Review A</i> , 1987, 36, 261-267.	1.0	140
87	Fractal measures and their singularities: The characterization of strange sets. <i>Physical Review A</i> , 1986, 33, 1141-1151.	1.0	3,059
88	Velocity Selection and the Saffman-Taylor Problem. <i>Physical Review Letters</i> , 1986, 56, 2028-2031.	2.9	204
89	Order, Disorder, and Phase Turbulence. <i>Physical Review Letters</i> , 1986, 57, 325-328.	2.9	85
90	Viscous flows in two dimensions. <i>Reviews of Modern Physics</i> , 1986, 58, 977-999.	16.4	674

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91	Scaling Laws for Mode Lockings in Circle Maps. <i>Physica Scripta</i> , 1985, 32, 263-270.	1.2	97
92	Transition from quasiperiodicity to chaos: A perturbative renormalization-group approach. <i>Physical Review A</i> , 1984, 29, 3464-3466.	1.0	17
93	Two-dimensional XY magnets with random Dzyaloshinskii-Moriya interactions. <i>Physical Review B</i> , 1983, 27, 1800-1811.	1.1	109
94	Scaling Theory for Noisy Period-Doubling Transitions to Chaos. <i>Physical Review Letters</i> , 1981, 46, 935-939.	2.9	187