Boris I Shraiman

List of Publications by Year
in descending order

94	17,314	26630 56	39675 94
papers	citations	h-index	g-index

100	100	100	12516
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Fractal measures and their singularities: The characterization of strange sets. Physical Review A, 1986, 33, 1141-1151.	2.5	3,059
2	Dynamic Jahn-Teller Effect and Colossal Magnetoresistance inLa1â^'xSrxMnO3. Physical Review Letters, 1996, 77, 175-178.	7.8	1,297
3	Multistability in the lactose utilization network of Escherichia coli. Nature, 2004, 427, 737-740.	27.8	932
4	Viscous flows in two dimensions. Reviews of Modern Physics, 1986, 58, 977-999.	45.6	674
5	â€˜Infotaxisâ€™ as a strategy for searching without gradients. Nature, 2007, 445, 406-409.	27.8	653
6	Scalar turbulence. Nature, 2000, 405, 639-646.	27.8	639
7	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.	7.1	533
8	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.	7.1	479
9	Heat transport in high-Rayleigh-number convection. Physical Review A, 1990, 42, 3650-3653.	2.5	394
10	Spiral phase of a doped quantum antiferromagnet. Physical Review Letters, 1989, 62, 1564-1567.	7.8	385
11	Mobile Vacancies in a Quantum Heisenberg Antiferromagnet. Physical Review Letters, 1988, 61, 467-470.	7.8	383
12	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.	7.1	374
13	Fermi-liquid-to-polaron crossover. II. Double exchange and the physics of colossal magnetoresistance. Physical Review B, 1996, 54, 5405-5417.	3.2	354
14	Assembly of ordered colloidal aggregrates by electric-field-induced fluid flow. Nature, 1997, 386, 57-59.	27.8	348
15	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.	7.1	327
16	Two-particle excitations in antiferromagnetic insulators. Physical Review Letters, 1988, 60, 740-743.	7.8	287
17	Theory of Raman scattering in Mott-Hubbard systems. Physical Review Letters, 1990, 65, 1068-1071.	7.8	258
18	Fermi-liquid-to-polaron crossover. I. General results. Physical Review B, 1996, 54, 5389-5404.	3.2	218

#	Article	IF	Citations
19	The role of nonlinear dynamics of the syrinx in the vocalizations of a songbird. Nature, 1998, 395, 67-71.	27.8	217
20	Velocity Selection and the Saffman-Taylor Problem. Physical Review Letters, 1986, 56, 2028-2031.	7.8	204
21	Intergrain Magnetoresistance via Second-Order Tunneling in Perovskite Manganites. Physical Review Letters, 1999, 82, 4508-4511.	7.8	190
22	Scaling Theory for Noisy Period-Doubling Transitions to Chaos. Physical Review Letters, 1981, 46, 935-939.	7.8	187
23	Lagrangian path integrals and fluctuations in random flow. Physical Review E, 1994, 49, 2912-2927.	2.1	180
24	A Biophysical Approach to Transcription Factor Binding Site Discovery. Genome Research, 2003, 13, 2381-2390.	5.5	179
25	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.	7.1	165
26	Predicting evolution from the shape of genealogical trees. ELife, 2014, 3, .	6.0	159
27	Chaotic behavior of an extended system. Physica D: Nonlinear Phenomena, 1989, 37, 109-115.	2.8	146
28	Global morphogenetic flow is accurately predicted by the spatial distribution of myosin motors. ELife, 2018, 7, .	6.0	146
29	Diffusive transport in a Rayleigh-BÃ©nard convection cell. Physical Review A, 1987, 36, 261-267.	2.5	140
30	Engineering Aspects of Enzymatic Signal Transduction: Photoreceptors in the Retina. Biophysical Journal, 2000, 79, 2801-2817.	0.5	136
31	Mechanical Stress Inference for Two Dimensional Cell Arrays. PLoS Computational Biology, 2012, 8, e1002512.	3.2	135
32	Towards the clarity limit in optical fibre. Nature, 2000, 404, 262-264.	27.8	132
33	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.	7.1	124
34	A model for velocity fluctuations in sedimentation. Journal of Fluid Mechanics, 2004, 501, 71-104.	3.4	118
35	Olfactory search at high Reynolds number. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 12589-12593.	7.1	114
36	Exponential tails and random advection. Physical Review Letters, 1991, 66, 2984-2987.	7.8	110

#	Article	IF	Citations
37	Two-dimensionalXYmagnets with random Dzyaloshinskii-Moriya interactions. Physical Review B, 1983, 27, 1800-1811.	3.2	109
38	Human neural tube morphogenesis in vitro by geometric constraints. Nature, 2021, 599, 268-272.	27.8	107
39	Persistent Small Scale Anisotropy in Homogeneous Shear Flows. Physical Review Letters, 1995, 75, 3114-3117.	7.8	101
40	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.	7.1	99
41	MicroRNA Profiling Reveals Two Distinct p53-Related Human Pluripotent Stem Cell States. Cell Stem Cell, 2010, 7, 671-681.	11.1	98
42	Scaling Laws for Mode Lockings in Circle Maps. Physica Scripta, 1985, 32, 263-270.	2.5	97
43	Nonadiabatic effects in convection. Physical Review A, 1988, 38, 5461-5464.	2.5	96
44	Dynamic Mutationâ€“Selection Balance as an Evolutionary Attractor. Genetics, 2012, 191, 1309-1319.	2.9	96
45	Mechanical control of growth: ideas, facts and challenges. Development (Cambridge), 2017, 144, 4238-4248.	2.5	92
46	Geometry of Lagrangian Dispersion in Turbulence. Physical Review Letters, 2000, 85, 5324-5327.	7.8	87
47	Statistical genetics and evolution of quantitative traits. Reviews of Modern Physics, 2011, 83, 1283-1300.	45.6	87
48	Order, Disorder, and Phase Turbulence. Physical Review Letters, 1986, 57, 325-328.	7.8	85
49	Mobile vacancy in a quantum antiferromagnet: Effective Hamiltonian. Physical Review B, 1990, 42, 2485-2500.	3.2	85
50	Faraday rotation and the Hall constant in strongly correlated Fermi systems. Physical Review Letters, 1993, 70, 2004-2007.	7.8	83
51	Polygenicity and Epistasis Underlie Fitness-Proximal Traits in theCaenorhabditis elegansMultiparental Experimental Evolution (CeMEE) Panel. Genetics, 2017, 207, 1663-1685.	2.9	81
52	Inferring Cell-State Transition Dynamics from Lineage Trees and Endpoint Single-Cell Measurements. Cell Systems, 2016, 3, 419-433.e8.	6.2	79
53	Specificity and robustness in transcription control networks. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 2072-2077.	7.1	76
54	Active tension network model suggests an exotic mechanical state realized in epithelial tissues. Nature Physics, 2017, 13, 1221-1226.	16.7	73

#	Article	IF	Citations
55	Symmetry and Scaling of Turbulent Mixing. Physical Review Letters, 1996, 77, 2463-2466.	7.8	71
56	Ground state of a mobile vacancy in a quantum antiferromagnet: Small-cluster study. Physical Review B, 1990, 41, 6715-6723.	3.2	68
57	Fluctuations of Fitness Distributions and the Rate of Mullerâ€™s Ratchet. Genetics, 2012, 191, 1283-1293.	2.9	63
58	Mean-field theory for vacancies in a quantum antiferromagnet. Physical Review B, 1989, 40, 9162-9166.	3.2	62
59	Curie and non-Curie behavior of impurity spins in quantum antiferromagnets. Physical Review B, 1993, 48, 7070-7076.	3.2	62
60	A dynamical model of ommatidial crystal formation. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 11145-11150.	7.1	62
61	Order and Stochastic Dynamics in Drosophila Planar Cell Polarity. PLoS Computational Biology, 2009, 5, e1000628.	3.2	61
62	Detection of a MicroRNA Signal in an In Vivo Expression Set of mRNAs. PLoS ONE, 2007, 2, e804.	2.5	61
63	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.	7.1	60
64	Metabolic Switching in the Sugar Phosphotransferase System of Escherichia coli. Biophysical Journal, 2003, 85, 744-754.	0.5	55
65	Perturbation theory for the Î´-correlated model of passive scalar advection near the Batchelor limit. Physical Review E, 1997, 55, R1263-R1266.	2.1	53
66	On the role of glypicans in the process of morphogen gradient formation. Developmental Biology, 2006, 300, 512-522.	2.0	53
67	Correlated Evolution of Nearby Residues in Drosophilid Proteins. PLoS Genetics, 2011, 7, e1001315.	3.5	48
68	Excitation spectrum of the spiral state of a doped antiferromagnet. Physical Review B, 1992, 46, 8305-8311.	3.2	43
69	Structures and Multipoint Correlators for Turbulent Advection: Predictions and Experiments. Physical Review Letters, 1998, 81, 4373-4376.	7.8	39
70	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.	7.1	31
71	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.	7.1	30
72	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.	7.1	30

#	Article	IF	Citations
73	Phylodynamic theory of persistence, extinction and speciation of rapidly adapting pathogens. ELife, 2019, 8, .	6.0	30
74	Vortex morphology and Kelvinâ€™s theorem. Physical Review A, 1992, 45, R5351-R5354.	2.5	29
75	The tale of two RNA polymerases: transcription profiling and gene expression strategy of bacteriophage Xp10. Molecular Microbiology, 2004, 55, 764-777.	2.5	29
76	On the Role of Assembly Kinetics in Determining the Structure of Clathrin Cages. Biophysical Journal, 1997, 72, 953-957.	0.5	26
77	Inferring epigenetic dynamics from kin correlations. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E2281-9.	7.1	25
78	Anomalous scaling for a passive scalar near the Batchelor limit. Physical Review E, 1998, 57, 2965-2977.	2.1	23
79	How to Infer Relative Fitness from a Sample of Genomic Sequences. Genetics, 2014, 197, 913-923.	2.9	21
80	Transition from quasiperiodicity to chaos: A perturbative renormalization-group approach. Physical Review A, 1984, 29, 3464-3466.	2.5	17
81	G-Protein-Coupled Enzyme Cascades Have Intrinsic Properties that Improve Signal Localization and Fidelity. Biophysical Journal, 2005, 88, 3063-3071.	0.5	17
82	Visceral organ morphogenesis via calcium-patterned muscle constrictions. ELife, 2022, 11, .	6.0	17
83	Emergence of clones in sexual populations. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, P01008.	2.3	16
84	Epistasis in a Model of Molecular Signal Transduction. PLoS Computational Biology, 2011, 7, e1001134.	3.2	14
85	Leaf growth is conformal. Physical Biology, 2016, 13, 05LT01.	1.8	13
86	Variational Method for Image-Based Inference of Internal Stress in Epithelial Tissues. Physical Review X, 2020, 10, .	8.9	11
87	Sector search strategies for odor trail tracking. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	11
88	Lagrangian Particle Approach to Large Eddy Simulations of Hydrodynamic Turbulence. Journal of Statistical Physics, 2003, 113, 693-700.	1.2	10
89	Fluctuations can induce local nematic order and extensile stress in monolayers of motile cells. Soft Matter, 2021, 17, 3068-3073.	2.7	9
90	Shastry, Shraiman, and Singh reply. Physical Review Letters, 1993, 71, 2838-2838.	7.8	8

#	Article	IF	Citations
91	Evolutionary dynamics and statistical physics. Journal of Statistical Mechanics: Theory and Experiment, 2013, 2013, N01001.	2.3	8
92	Theory of optical absorption by a localized carrier in an antiferromagnetic insulator. Physical Review B, 1992, 46, 14834-14841.	3.2	5
93	High Rayleigh number convection and passive scalar mixing. Physica D: Nonlinear Phenomena, 1996, 97, 286-290.	2.8	5
94	Turbulent mixing of a passive scalar. Physica A: Statistical Mechanics and Its Applications, 1999, 263, 95-103.	2.6	3