

Eric D Siggia

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139
papers

22,882
citations

66
h-index

148
g-index

148
ext. papers

25,525
ext. citations

10.1
avg, IF

6.92
L-index

#	Paper	IF	Citations
139	Stochastic gene expression in a single cell. <i>Science</i> , 2002 , 297, 1183-6	33.3	3846
138	Stretching DNA. <i>Macromolecules</i> , 1995 , 28, 8759-8770	5.5	1955
137	Intrinsic and extrinsic contributions to stochasticity in gene expression. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 12795-800	11.5	1167
136	Late stages of spinodal decomposition in binary mixtures. <i>Physical Review A</i> , 1979 , 20, 595-605	2.6	1039
135	Nuclear membrane dynamics and reassembly in living cells: targeting of an inner nuclear membrane protein in interphase and mitosis. <i>Journal of Cell Biology</i> , 1997 , 138, 1193-206	7.3	667
134	One-Dimensional Schrödinger Equation with an Almost Periodic Potential. <i>Physical Review Letters</i> , 1983 , 50, 1873-1876	7.4	594
133	Regulatory element detection using correlation with expression. <i>Nature Genetics</i> , 2001 , 27, 167-71	36.3	573
132	Scalar turbulence. <i>Nature</i> , 2000 , 405, 639-46	50.4	553
131	Kinetic analysis of secretory protein traffic and characterization of golgi to plasma membrane transport intermediates in living cells. <i>Journal of Cell Biology</i> , 1998 , 143, 1485-503	7.3	510
130	Dynamics of superfluid films. <i>Physical Review B</i> , 1980 , 21, 1806-1826	3.3	507
129	A method to recapitulate early embryonic spatial patterning in human embryonic stem cells. <i>Nature Methods</i> , 2014 , 11, 847-54	21.6	461
128	Tracking the in vivo evolution of multidrug resistance in <i>Staphylococcus aureus</i> by whole-genome sequencing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007 , 104, 9451-6	11.5	456
127	Golgi tubule traffic and the effects of brefeldin A visualized in living cells. <i>Journal of Cell Biology</i> , 1997 , 139, 1137-55	7.3	422
126	Numerical study of small-scale intermittency in three-dimensional turbulence. <i>Journal of Fluid Mechanics</i> , 1981 , 107, 375	3.7	392
125	Self-organization of the in vitro attached human embryo. <i>Nature</i> , 2016 , 533, 251-4	50.4	374
124	Mobile vacancies in a quantum Heisenberg antiferromagnet. <i>Physical Review Letters</i> , 1988 , 61, 467-470	7.4	357
123	Spiral phase of a doped quantum antiferromagnet. <i>Physical Review Letters</i> , 1989 , 62, 1564-1567	7.4	351

122	The effects of molecular noise and size control on variability in the budding yeast cell cycle. <i>Nature</i> , 2007 , 448, 947-51	50.4	343
121	Heat transport in high-Rayleigh-number convection. <i>Physical Review A</i> , 1990 , 42, 3650-3653	2.6	326
120	Golgi membranes are absorbed into and reemerge from the ER during mitosis. <i>Cell</i> , 1999 , 99, 589-601	56.2	295
119	Two-particle excitations in antiferromagnetic insulators. <i>Physical Review Letters</i> , 1988 , 60, 740-743	7.4	270
118	Positive feedback of G1 cyclins ensures coherent cell cycle entry. <i>Nature</i> , 2008 , 454, 291-6	50.4	251
117	Analysis of combinatorial cis-regulation in synthetic and genomic promoters. <i>Nature</i> , 2009 , 457, 215-8	50.4	243
116	Dissipation in Two-Dimensional Superfluids. <i>Physical Review Letters</i> , 1978 , 40, 783-786	7.4	240
115	Dynamics and retention of misfolded proteins in native ER membranes. <i>Nature Cell Biology</i> , 2000 , 2, 288-294	25.4	232
114	Dissection of COPI and Arf1 dynamics in vivo and role in Golgi membrane transport. <i>Nature</i> , 2002 , 417, 187-93	50.4	219
113	Universal Transition from Quasiperiodicity to Chaos in Dissipative Systems. <i>Physical Review Letters</i> , 1982 , 49, 132-135	7.4	216
112	Universal properties of the transition from quasi-periodicity to chaos in dissipative systems. <i>Physica D: Nonlinear Phenomena</i> , 1983 , 8, 303-342	3.3	214
111	PhyloGibbs: a Gibbs sampling motif finder that incorporates phylogeny. <i>PLoS Computational Biology</i> , 2005 , 1, e67	5	204
110	A Balance between Secreted Inhibitors and Edge Sensing Controls Gastruloid Self-Organization. <i>Developmental Cell</i> , 2016 , 39, 302-315	10.2	184
109	Pattern Selection in Rayleigh-Bénard Convection near Threshold. <i>Physical Review Letters</i> , 1981 , 47, 835-838	7.4	183
108	Lagrangian path integrals and fluctuations in random flow. <i>Physical Review E</i> , 1994 , 49, 2912-2927	2.4	161
107	Protein-DNA binding specificity predictions with structural models. <i>Nucleic Acids Research</i> , 2005 , 33, 5781-5788	16.8	152
106	Properties of Electrons in Semiconductor Inversion Layers with Many Occupied Electric Subbands. I. Screening and Impurity Scattering. <i>Physical Review B</i> , 1970 , 2, 1024-1036	3.3	152
105	Using DNA mechanics to predict in vitro nucleosome positions and formation energies. <i>Nucleic Acids Research</i> , 2009 , 37, 4707-22	20.1	151

104	Collapse and amplification of a vortex filament. <i>Physics of Fluids</i> , 1985 , 28, 794		135
103	Dynamics of defects in Rayleigh-Bénard convection. <i>Physical Review A</i> , 1981 , 24, 1036-1049	2.6	122
102	Collapsing solutions to the 3-D Euler equations. <i>Physics of Fluids A, Fluid Dynamics</i> , 1990 , 2, 220-241		115
101	Diffusion in inhomogeneous media: theory and simulations applied to whole cell photobleach recovery. <i>Biophysical Journal</i> , 2000 , 79, 1761-70	2.9	114
100	Ground-state properties of the two-dimensional antiferromagnetic Heisenberg model. <i>Physical Review B</i> , 1989 , 39, 2484-2493	3.3	107
99	Coherence and timing of cell cycle start examined at single-cell resolution. <i>Molecular Cell</i> , 2006 , 21, 3-14	17.6	103
98	Micropattern differentiation of mouse pluripotent stem cells recapitulates embryo regionalized cell fate patterning. <i>ELife</i> , 2018 , 7,	8.9	101
97	A microfluidic device for temporally controlled gene expression and long-term fluorescent imaging in unperturbed dividing yeast cells. <i>PLoS ONE</i> , 2008 , 3, e1468	3.7	100
96	The density distribution of a weakly interacting bose gas in an external potential. <i>Journal of Low Temperature Physics</i> , 1982 , 46, 137-149	1.3	96
95	Exponential tails and random advection. <i>Physical Review Letters</i> , 1991 , 66, 2984-2987	7.4	93
94	Self-organization of stem cells into embryos: A window on early mammalian development. <i>Science</i> , 2019 , 364, 948-951	33.3	90
93	Stability of finite-amplitude convection. <i>Physics of Fluids</i> , 1983 , 26, 2905		89
92	Turbulent Premixed Flames and Sound Generation. <i>Combustion Science and Technology</i> , 1991 , 78, 147-155	5.5	88
91	Encoding of temporal signals by the TGF- β pathway and implications for embryonic patterning. <i>Developmental Cell</i> , 2014 , 30, 334-42	10.2	83
90	Deriving structure from evolution: metazoan segmentation. <i>Molecular Systems Biology</i> , 2007 , 3, 154	12.2	82
89	High functional overlap between MluI cell-cycle box binding factor and Swi4/6 cell-cycle box binding factor in the G1/S transcriptional program in <i>Saccharomyces cerevisiae</i> . <i>Genetics</i> , 2005 , 171, 49-61	4	81
88	Mobile vacancy in a quantum antiferromagnet: Effective Hamiltonian. <i>Physical Review B</i> , 1990 , 42, 2485-2500	3.5	80
87	Vortex dynamics and the existence of solutions to the Navier-Stokes equations. <i>Physics of Fluids</i> , 1987 , 30, 1606		78

86	Vortex dynamics of the two-dimensional turbulent shear layer. <i>Journal of Fluid Mechanics</i> , 1980 , 100, 705-737	3.7	76
85	Origin of irreversibility of cell cycle start in budding yeast. <i>PLoS Biology</i> , 2010 , 8, e1000284	9.7	75
84	Phenotypic model for early T-cell activation displaying sensitivity, specificity, and antagonism. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, E888-97	11.5	73
83	Self-organization of human embryonic stem cells on micropatterns. <i>Nature Protocols</i> , 2016 , 11, 2223-2232	12.8	72
82	A 3D model of a human epiblast reveals BMP4-driven symmetry breaking. <i>Nature Cell Biology</i> , 2019 , 21, 900-910	23.4	72
81	Nucleosome-depleted regions in cell-cycle-regulated promoters ensure reliable gene expression in every cell cycle. <i>Developmental Cell</i> , 2010 , 18, 544-55	10.2	70
80	Dynamics of TGF- β signaling reveal adaptive and pulsatile behaviors reflected in the nuclear localization of transcription factor Smad4. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, E1947-56	11.5	69
79	Identification of the binding sites of regulatory proteins in bacterial genomes. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 11772-7	11.5	69
78	Development of singular solutions to the axisymmetric Euler equations. <i>Physics of Fluids A, Fluid Dynamics</i> , 1992 , 4, 1472-1491		69
77	Evolution and breakdown of a vortex street in two dimensions. <i>Journal of Fluid Mechanics</i> , 1981 , 109, 435-463	3.7	68
76	Topological constraints on quasicrystal transformations. <i>Physical Review B</i> , 1986 , 34, 3649-3669	3.3	67
75	Intermittency effects in a numerical simulation of stationary three-dimensional turbulence. <i>Journal of Fluid Mechanics</i> , 1978 , 86, 567-592	3.7	67
74	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
73	Tricritical dynamics near four dimensions. <i>Physical Review B</i> , 1977 , 15, 1427-1444	3.3	66
72	The role of proofreading in signal transduction specificity. <i>Biophysical Journal</i> , 2002 , 82, 2928-33	2.9	64
71	Symmetry and Scaling of Turbulent Mixing. <i>Physical Review Letters</i> , 1996 , 77, 2463-2466	7.4	63
70	Mean-field theory for vacancies in a quantum antiferromagnet. <i>Physical Review B</i> , 1989 , 40, 9162-9166	3.3	58
69	Bose Condensation in Spin-Polarized Atomic Hydrogen. <i>Physical Review Letters</i> , 1980 , 44, 1423-1426	7.4	58

68	A case study of evolutionary computation of biochemical adaptation. <i>Physical Biology</i> , 2008 , 5, 026009	3	57
67	Connecting protein structure with predictions of regulatory sites. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007 , 104, 7068-73	11.5	55
66	Probabilistic clustering of sequences: inferring new bacterial regulons by comparative genomics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 7323-8	11.5	55
65	Pseudospin formulation of kinetic Ising models. <i>Physical Review B</i> , 1977 , 16, 2319-2320	3.3	54
64	Temperature compensation and temperature sensation in the circadian clock. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, E6284-92	11.5	53
63	Fluctuations about hydrodynamic nonequilibrium steady states. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1980 , 76, 57-60	2.3	53
62	Long-Term High-Resolution Imaging of Developing C. elegans Larvae with Microfluidics. <i>Developmental Cell</i> , 2017 , 40, 202-214	10.2	50
61	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
60	Computational methods for transcriptional regulation. <i>Current Opinion in Genetics and Development</i> , 2005 , 15, 214-21	4.9	49
59	Origin of intermittency in fully developed turbulence. <i>Physical Review A</i> , 1977 , 15, 1730-1750	2.6	48
58	A wave of WNT signaling balanced by secreted inhibitors controls primitive streak formation in micropattern colonies of human embryonic stem cells. <i>Development (Cambridge)</i> , 2019 , 146,	6.6	48
57	Finite-time singularities in the axisymmetric three-dimension Euler equations. <i>Physical Review Letters</i> , 1992 , 68, 1511-1514	7.4	46
56	Incipient singularities in the Navier-Stokes equations. <i>Physical Review Letters</i> , 1985 , 55, 1749-1752	7.4	46
55	Point-vortex simulation of the inverse energy cascade in two-dimensional turbulence. <i>Physics of Fluids</i> , 1981 , 24, 171		46
54	Invariants for the one-point vorticity and strain rate correlation functions. <i>Physics of Fluids</i> , 1981 , 24, 1934		46
53	Disappearance of stable convection between free-slip boundaries. <i>Physical Review A</i> , 1982 , 26, 1788-1790	6	41
52	Model of intermittency in three-dimensional turbulence. <i>Physical Review A</i> , 1978 , 17, 1166-1176	2.6	40
51	Sequence turnover and tandem repeats in cis-regulatory modules in drosophila. <i>Molecular Biology and Evolution</i> , 2005 , 22, 874-85	8.3	39

50	Structures and Multipoint Correlators for Turbulent Advection: Predictions and Experiments. <i>Physical Review Letters</i> , 1998 , 81, 4373-4376	7.4	39
49	Spin-wave velocity and susceptibility for the two-dimensional Heisenberg antiferromagnet. <i>Physical Review B</i> , 1989 , 40, 11328-11330	3.3	39
48	WNT signaling memory is required for ACTIVIN to function as a morphogen in human gastruloids. <i>ELife</i> , 2018 , 7,	8.9	39
47	Decisions on the fly in cellular sensory systems. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, E3704-12	11.5	38
46	Excitation spectrum of the spiral state of a doped antiferromagnet. <i>Physical Review B</i> , 1992 , 46, 8305-8313	3.3	38
45	Adaptive temperature compensation in circadian oscillations. <i>PLoS Computational Biology</i> , 2012 , 8, e1002585	3.3	36
44	Skewed, exponential pressure distributions from Gaussian velocities. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993 , 5, 2525-2532		36
43	k - ϵ perturbation theory in semiconductor alloys. <i>Physical Review B</i> , 1974 , 10, 5147-5158	3.3	33
42	Critical dynamics of dilute He3-He4 mixtures. <i>Physical Review B</i> , 1977 , 15, 2830-2834	3.3	30
41	Critical dynamics of helium below T_c . <i>Physical Review B</i> , 1976 , 13, 3218-3221	3.3	28
40	Cascade model of fully developed turbulence. <i>Journal of Statistical Physics</i> , 1978 , 19, 543-552	1.5	28
39	Vortex morphology and Kelvin's theorem. <i>Physical Review A</i> , 1992 , 45, R5351-R5354	2.6	27
38	Phenotypic models of evolution and development: geometry as destiny. <i>Current Opinion in Genetics and Development</i> , 2012 , 22, 627-33	4.9	25
37	Gene expression from random libraries of yeast promoters. <i>Genetics</i> , 2006 , 172, 2113-22	4	23
36	Painlevé property and integrability. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1986 , 119, 112-116	2.3	23
35	Anomalous scaling for a passive scalar near the Batchelor limit. <i>Physical Review E</i> , 1998 , 57, 2965-2977	2.4	22
34	Comment on dynamical theories of the liquid-glass transition. <i>Physical Review A</i> , 1985 , 32, 3135-3138	2.6	22
33	Hydrodynamics of the condensed phases of spin-polarized atomic hydrogen. <i>Physical Review B</i> , 1981 , 23, 3580-3583	3.3	21

32	Mapping cell migrations and fates in a gastruloid model to the human primitive streak. <i>Development (Cambridge)</i> , 2019 , 146,	6.6	19
31	Painlevé property and geometry. <i>Physica D: Nonlinear Phenomena</i> , 1989 , 34, 303-346	3.3	17
30	Gene-free methodology for cell fate dynamics during development. <i>ELife</i> , 2017 , 6,	8.9	16
29	Modeling Mammalian Gastrulation With Embryonic Stem Cells. <i>Current Topics in Developmental Biology</i> , 2018 , 129, 1-23	5.3	16
28	Surface magnetic relaxation rates in spin-polarized hydrogen. <i>Physical Review B</i> , 1982 , 25, 6031-6034	3.3	15
27	Human neural tube morphogenesis in vitro by geometric constraints. <i>Nature</i> , 2021 , 599, 268-272	50.4	14
26	Small-scale anisotropy in turbulent boundary layers. <i>Journal of Fluid Mechanics</i> , 2016 , 804, 5-23	3.7	12
25	Shake it, don't break it: positive feedback and the evolution of oscillator design. <i>Developmental Cell</i> , 2005 , 9, 309-10	10.2	12
24	Universal transition in a dynamical system forced at two incommensurate frequencies. <i>Physica D: Nonlinear Phenomena</i> , 1984 , 11, 193-211	3.3	11
23	Critical dynamics of kinetic Ising models in four dimensions. <i>Physical Review B</i> , 1975 , 11, 4736-4736	3.3	11
22	Predicting Ancestral Segmentation Phenotypes from Drosophila to Anopheles Using In Silico Evolution. <i>PLoS Genetics</i> , 2016 , 12, e1006052	6	11
21	On the interface dynamics for convection in porous media. <i>Physica D: Nonlinear Phenomena</i> , 1992 , 57, 311-329	3.3	7
20	Geometry of gene regulatory dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118,	11.5	7
19	Differential compartmentalization of BMP4/NOGGIN requires NOGGIN trans-epithelial transport. <i>Developmental Cell</i> , 2021 , 56, 1930-1944.e5	10.2	6
18	Statistically derived geometrical landscapes capture principles of decision-making dynamics during cell fate transitions. <i>Cell Systems</i> , 2021 ,	10.6	6
17	In vitro modeling of early mammalian embryogenesis. <i>Current Opinion in Biomedical Engineering</i> , 2020 , 13, 134-143	4.4	5
16	High Rayleigh number convection and passive scalar mixing. <i>Physica D: Nonlinear Phenomena</i> , 1996 , 97, 286-290	3.3	5
15	Turbulent mixing of a passive scalar. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1999 , 263, 95-103	3.3	3

14	Author response: Micropattern differentiation of mouse pluripotent stem cells recapitulates embryo regionalized cell fate patterning 2018 ,		3
13	Micropattern differentiation of mouse pluripotent stem cells recapitulates embryo regionalized cell fate patterning		3
12	Molecular mechanism of symmetry breaking in a 3D model of a human epiblast		3
11	In vitro attachment and symmetry breaking of a human embryo model assembled from primed embryonic stem cells. <i>Cell Stem Cell</i> , 2022 , 29, 962-972.e4	18	3
10	WNT signaling memory is required for ACTIVIN to function as a morphogen in human gastruloids		2
9	A rapidly convergent method for the inversion of separable, positive, self-adjoint discrete elliptic operators in three or more dimensions. <i>Journal of Computational Physics</i> , 1987 , 72, 498-500	4.1	1
8	SCALING AND STRUCTURES IN FULLY TURBULENT FLOWS. <i>Annals of the New York Academy of Sciences</i> , 1980 , 357, 368-376	6.5	1
7	EOMES is responsible for WNT memory and can substitute for WNT in mesendoderm specification		1
6	The strong coupling limit of K.A.M. theory and the onset of turbulence. <i>Physics Reports</i> , 1984 , 103, 87-94	27.7	0
5	A Geometric Model of Stripe Refinement. <i>Developmental Cell</i> , 2017 , 41, 225-227	10.2	
4	Comment on "Controlling long-term signaling: receptor dynamics determine attenuation and refractory behavior of the TGF- β pathway"-Smad2/3 activity does not predict the dynamics of transcription. <i>Science Signaling</i> , 2014 , 7, lc1	8.8	
3	Decoding the Genome. <i>Annales Henri Poincare</i> , 2003 , 4, 663-666	1.2	
2	Singular solutions to the 3D axisymmetric incompressible Euler equations. <i>Physica D: Nonlinear Phenomena</i> , 1992 , 61, 240-245	3.3	
1	Onset of turbulent convection in large cells. <i>Physica A: Statistical Mechanics and Its Applications</i> , 1983 , 118, 335	3.3	