

Peter Schuster

List of Publications by Year in descending order

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106
papers

9,698
citations

94433

37
h-index

45317

90
g-index

111
all docs

111
docs citations

111
times ranked

3493
citing authors

#	ARTICLE	IF	CITATIONS
1	Manfred Eigen (1927–2019). <i>Angewandte Chemie</i> , 2019, 131, 9423-9424.	2.0	0
2	Manfred Eigen (1927–2019). <i>Angewandte Chemie - International Edition</i> , 2019, 58, 9323-9324.	13.8	0
3	What is special about autocatalysis?. <i>Monatshefte für Chemie</i> , 2019, 150, 763-775.	1.8	30
4	Molecular evolution between chemistry and biology. <i>European Biophysics Journal</i> , 2018, 47, 403-425.	2.2	1
5	Increase in Complexity and Information through Molecular Evolution. <i>Entropy</i> , 2016, 18, 397.	2.2	11
6	Major transitions in evolution and in technology: What they have in common and where they differ. <i>Complexity</i> , 2016, 21, 7-13.	1.6	8
7	The end of Moore's law: Living without an exponential increase in the efficiency of computational facilities. <i>Complexity</i> , 2016, 21, 6-9.	1.6	20
8	Some mechanistic requirements for major transitions. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2016, 371, 20150439.	4.0	4
9	Stochasticity in Processes. <i>Springer Series in Synergetics</i> , 2016, , .	0.4	25
10	Models of evolution and evolutionary game theory. <i>Physics of Life Reviews</i> , 2016, 19, 32-35.	2.8	2
11	Applications in Biology. <i>Springer Series in Synergetics</i> , 2016, , 569-677.	0.4	0
12	How complexity originates: Examples from history reveal additional roots to complexity. <i>Complexity</i> , 2016, 21, 7-12.	1.6	6
13	Historical Contingency in Controlled Evolution. , 2015, , 187-220.		0
14	Models: From exploration to prediction: Bad reputation of modeling in some disciplines results from nebulous goals. <i>Complexity</i> , 2015, 21, 6-9.	1.6	4
15	Ebola challenge and revival of theoretical epidemiology: Why Extrapolations from early phases of epidemics are problematic. <i>Complexity</i> , 2015, 20, 7-12.	1.6	5
16	What Is a Quasispecies? Historical Origins and Current Scope. <i>Current Topics in Microbiology and Immunology</i> , 2015, 392, 1-22.	1.1	27
17	Quasispecies on Fitness Landscapes. <i>Current Topics in Microbiology and Immunology</i> , 2015, 392, 61-120.	1.1	37
18	Are computer scientists the sutlers of modern biology?: Bioinformatics is indispensable for progress in molecular life sciences but does not get credit for its contributions. <i>Complexity</i> , 2014, 19, 10-14.	1.6	0

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19	The dilemma of statistics: Rigorous mathematical methods cannot compensate messy interpretations and lousy data. Complexity, 2014, 20, 11-15.	1.6	0
20	Phylogeny and Evolution of RNA Structure. Methods in Molecular Biology, 2014, 1097, 319-378.	0.9	4
21	Recycling and growth in early evolution and today. Complexity, 2013, 19, 6-9.	1.6	0
22	A Silent revolution in mathematics. Complexity, 2013, 18, 7-10.	1.6	3
23	Designing living matter. Can we do better than evolution?. Complexity, 2013, 18, 21-33.	1.6	1
24	Optimization of multiple criteria: Pareto efficiency and fast heuristics should be more popular than they are. Complexity, 2012, 18, 5-7.	1.6	16
25	How universal is Darwin's principle?. Physics of Life Reviews, 2012, 9, 460-461.	2.8	2
26	A revival of the landscape paradigm: Large scale data harvesting provides access to fitness landscapes. Complexity, 2012, 17, 6-10.	1.6	8
27	Mathematical modeling of evolution. Solved and open problems. Theory in Biosciences, 2011, 130, 71-89.	1.4	59
28	Power laws in biology: Between fundamental regularities and useful interpolation rules. Complexity, 2011, 16, 6-9.	1.6	4
29	Networks in biology: Handling biological complexity requires novel inputs into network theory. Complexity, 2011, 16, 6-9.	1.6	1
30	Is there a Newton of the blade of grass?. Complexity, 2011, 16, 5-9.	1.6	4
31	Lethal mutagenesis, error thresholds, and the fight against viruses: Rigorous modeling is facilitated by a firm physical background. Complexity, 2011, 17, 5-9.	1.6	4
32	Origins of life: Concepts, data, and debates. Complexity, 2010, 15, 7-10.	1.6	3
33	Contingency and memory in evolution. Complexity, 2010, 15, 7-10.	1.6	0
34	Genotypes and Phenotypes in the Evolution of Molecules. European Review, 2009, 17, 281-319.	0.7	8
35	Free will, information, quantum mechanics, and biology. Complexity, 2009, 15, 8-10.	1.6	3
36	Modeling in biological chemistry. From biochemical kinetics to systems biology. Monatshefte für Chemie, 2008, 139, 427-446.	1.8	4

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37	Are there recipes for how to handle complexity?. Complexity, 2008, 14, 8-12.	1.6	2
38	Early Replicons: Origin and Evolution**Dedicated to Manfred Eigen, the pioneer of molecular evolution and intellectual father of quasispecies theory, on the occasion of his 80th birthday.. , 2008, , 1-41.		7
39	The Molecular Quasi-Species. Advances in Chemical Physics, 2007, , 149-263.	0.3	357
40	Modeling Conformational Flexibility and Evolution of Structure: RNA as an Example. Biological and Medical Physics Series, 2007, , 3-36.	0.4	1
41	Nonlinear dynamics from physics to biology. Complexity, 2007, 12, 9-11.	1.6	13
42	A beginning of the end of the holism versus reductionism debate?: Molecular biology goes cellular and organismic. Complexity, 2007, 13, 10-13.	1.6	9
43	Dynamic patterns of gene regulation I: Simple two-gene systems. Journal of Theoretical Biology, 2007, 246, 395-419.	1.7	48
44	Inverse bifurcation analysis: application to simple gene systems. Algorithms for Molecular Biology, 2006, 1, 11.	1.2	33
45	Prediction of RNA secondary structures: from theory to models and real molecules. Reports on Progress in Physics, 2006, 69, 1419-1477.	20.1	69
46	Untamable curiosity, innovation, discovery, and bricolage: Are we doomed to progress to ever increasing complexity?. Complexity, 2006, 11, 9-11.	1.6	3
47	Boltzmann, atomism, evolution, and statistics: Continuity versus discreteness in biology. Complexity, 2006, 11, 9-11.	1.6	6
48	Generation of information and complexity: Different forms of learning and innovation: A simple mechanism of learning. Complexity, 2005, 10, 12-14.	1.6	2
49	The commons' tragicomedy: Self-governance doesn't come easily. Complexity, 2005, 10, 10-12.	1.6	2
50	Evolution and design: The Darwinian view of evolution is a scientific fact and not an ideology. Complexity, 2005, 11, 12-15.	1.6	2
51	“Less is more” and the art of modeling complex phenomena: Simplification may but need not be the key to handle large networks. Complexity, 2005, 11, 11-13.	1.6	6
52	From Self-Organization to Evolution of RNA Molecules: The Origin of Biological Information. Solid State Phenomena, 2004, 97-98, 27-36.	0.3	0
53	Chemical reaction kinetics is back: Attempts to deal with complexity in biology: Developing a quantitative molecular view to understanding life. Complexity, 2004, 10, 14-16.	1.6	1
54	Discrete Models of Biopolymers. , 2004, , 187-221.		0

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55	A testable genotype-phenotype map: modeling evolution of RNA molecules. , 2002, , 55-81.		5
56	Networks in molecular evolution. Complexity, 2002, 8, 34-42.	1.6	17
57	Replication and Mutation on Neutral Networks. Bulletin of Mathematical Biology, 2001, 63, 57-94.	1.9	71
58	Mathematical Challenges from Molecular Evolution. , 2001, , 1019-1038.		0
59	Dynamics of Autocatalytic Replicator Networks Based on Higher-order Ligation Reactions. Bulletin of Mathematical Biology, 2000, 62, 1061-1086.	1.9	28
60	RNA folding at elementary step resolution. Rna, 2000, 6, 325-338.	3.5	266
61	Taming combinatorial explosion. Proceedings of the National Academy of Sciences of the United States of America, 2000, 97, 7678-7680.	7.1	45
62	Nature and evolution of early replicons. , 1999, , 1-24.		17
63	Chance and necessity in evolution: lessons from RNA. Physica D: Nonlinear Phenomena, 1999, 133, 427-452.	2.8	63
64	Force field based conformational analysis of RNA structural motifs: GNRA tetraloops and their pyrimidine relatives. European Biophysics Journal, 1999, 28, 564-573.	2.2	7
65	Molecular insights into evolution. Artificial Life and Robotics, 1999, 3, 19-23.	1.2	0
66	Complete suboptimal folding of RNA and the stability of secondary structures. Biopolymers, 1999, 49, 145-165.	2.4	455
67	Beherrschung von Komplexität in der molekularen Evolution. , 1999, , 117-145.		2
68	Shaping Space: the Possible and the Attainable in RNA Genotype-phenotype Mapping. Journal of Theoretical Biology, 1998, 194, 491-515.	1.7	163
69	Continuity in Evolution: On the Nature of Transitions. Science, 1998, 280, 1451-1455.	12.6	430
70	Evolution in an RNA World. Foundations of Modern Biochemistry, 1998, 4, 159-198.	0.6	6
71	RNA structures and folding: from conventional to new issues in structure predictions. Current Opinion in Structural Biology, 1997, 7, 229-235.	5.7	58
72	Autocatalytic networks with intermediates I: Irreversible reactions. Mathematical Biosciences, 1997, 140, 33-74.	1.9	9

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73	Generic properties of combinatory maps: Neutral networks of RNA secondary structures. Bulletin of Mathematical Biology, 1997, 59, 339-397.	1.9	189
74	Landscapes and molecular evolution. Physica D: Nonlinear Phenomena, 1997, 107, 351-365.	2.8	53
75	Genotypes with phenotypes: Adventures in an RNA toy world. Biophysical Chemistry, 1997, 66, 75-110.	2.8	52
76	Generic properties of combinatory maps: Neutral networks of RNA secondary structures. Bulletin of Mathematical Biology, 1997, 59, 339-397.	1.9	72
77	Molecular evolutionary biology. Annual Reports in Combinatorial Chemistry and Molecular Diversity, 1997, , 153-168.	0.4	0
78	How does complexity arise in evolution:Nature's recipe for mastering scarcity, abundance, and unpredictability. Complexity, 1996, 2, 22-30.	1.6	67
79	Structural constraints and neutrality in RNA. Lecture Notes in Computer Science, 1996, , 156-165.	1.3	3
80	How to search for RNA structures Theoretical concepts in evolutionary biotechnology. Journal of Biotechnology, 1995, 41, 239-257.	3.8	75
81	Statistics of RNA melting kinetics. European Biophysics Journal, 1994, 23, 29-38.	2.2	45
82	Landscapes: Complex optimization problems and biopolymer structures. Computers & Chemistry, 1994, 18, 295-324.	1.2	70
83	Statistics of RNA secondary structures. Biopolymers, 1993, 33, 1389-1404.	2.4	265
84	RNA folding and combinatory landscapes. Physical Review E, 1993, 47, 2083-2099.	2.1	202
85	Mutation in autocatalytic reaction networks. Journal of Mathematical Biology, 1992, 30, 597-631.	1.9	77
86	Full characterization of a strange attractor. Physica D: Nonlinear Phenomena, 1991, 48, 65-90.	2.8	65
87	Statistics of landscapes based on free energies, replication and degradation rate constants of RNA secondary structures. Monatshefte für Chemie, 1991, 122, 795-819.	1.8	36
88	Physical aspects of evolutionary optimization and adaptation. Physical Review A, 1989, 40, 3301-3321.	2.5	112
89	Error thresholds of replication in finite populations mutation frequencies and the onset of muller's ratchet. Journal of Theoretical Biology, 1989, 137, 375-395.	1.7	259
90	Stationary mutant distributions and evolutionary optimization. Bulletin of Mathematical Biology, 1988, 50, 635-660.	1.9	174

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91	Molecular quasi-species. The Journal of Physical Chemistry, 1988, 92, 6881-6891.	2.9	521
92	A computer model of evolutionary optimization. Biophysical Chemistry, 1987, 26, 123-147.	2.8	201
93	Dynamics of Evolutionary Optimization. Zeitschrift Fur Elektrotechnik Und Elektrochemie, 1985, 89, 668-682.	0.9	50
94	Polynucleotide evolution and branching processes. Bulletin of Mathematical Biology, 1985, 47, 239-262.	1.9	65
95	Dynamical machinery of a biochemical clock. Bulletin of Mathematical Biology, 1984, 46, 339-355.	1.9	9
96	Replicator dynamics. Journal of Theoretical Biology, 1983, 100, 533-538.	1.7	538
97	Self-replication with errors. Biophysical Chemistry, 1982, 16, 329-345.	2.8	339
98	Model studies onRNA-replication I. Monatshefte FÃ¼r Chemie, 1982, 113, 237-263.	1.8	5
99	Selfregulation of behaviour in animal societies. Biological Cybernetics, 1981, 40, 1-8.	1.3	60
100	Selfregulation of behaviour in animal societies. Biological Cybernetics, 1981, 40, 9-15.	1.3	40
101	Selfregulation of behaviour in animal societies. Biological Cybernetics, 1981, 40, 17-25.	1.3	41
102	The Hypercycle. , 1979, , .		863
103	The Hypercycle. Die Naturwissenschaften, 1978, 65, 341-369.	1.6	529
104	The Hypercycle. Die Naturwissenschaften, 1978, 65, 7-41.	1.6	523
105	A principle of natural self-organization. Die Naturwissenschaften, 1977, 64, 541-565.	1.6	1,562
106	Evolutionary Biotechnology â€œ From Ideas and Concepts to Experiments and Computer Simulations. , 0, 5-28.		0