Mauricio Barahona

List of Publications by Year in descending order

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#	Article	IF	CITATIONS
1	Quantifying the Alignment of Graph and Features in Deep Learning. IEEE Transactions on Neural Networks and Learning Systems, 2022, 33, 1663-1672.	11.3	10
2	Complex interlinkages, key objectives, and nexuses among the Sustainable Development Goals and climate change: a network analysis. Lancet Planetary Health, The, 2022, 6, e422-e430.	11.4	27
3	Relative, local and global dimension in complex networks. Nature Communications, 2022, 13, .	12.8	7
4	Reflection on modern methods: constructing directed acyclic graphs (DACs) with domain experts for health services research. International Journal of Epidemiology, 2022, 51, 1339-1348.	1.9	8
5	Allosteric Hotspots in the Main Protease of SARS-CoV-2. Journal of Molecular Biology, 2022, 434, 167748.	4.2	10
6	Prediction of Protein Allosteric Signalling Pathways and Functional Residues Through Paths of Optimised Propensity. Journal of Molecular Biology, 2022, 434, 167749.	4.2	5
7	Stationary Distributions of Continuous-Time Markov Chains: A Review of Theory and Truncation-Based Approximations. SIAM Review, 2021, 63, 3-64.	9.5	15
8	Approximations of Countably Infinite Linear Programs over Bounded Measure Spaces. SIAM Journal on Optimization, 2021, 31, 604-625.	2.0	2
9	Non-invasive suppression of essential tremor via phase-locked disruption of its temporal coherence. Nature Communications, 2021, 12, 363.	12.8	50
10	Graph-Based Topic Extraction from Vector Embeddings of Text Documents: Application to a Corpus of News Articles. Studies in Computational Intelligence, 2021, , 154-166.	0.9	3
11	Understanding learner behaviour in online courses with Bayesian modelling and time series characterisation. Scientific Reports, 2021, 11, 2823.	3.3	8
12	Learning compositional sequences with multiple time scales through a hierarchical network of spiking neurons. PLoS Computational Biology, 2021, 17, e1008866.	3.2	7
13	Systems level profiling of chemotherapy-induced stress resolution in cancer cells reveals druggable trade-offs. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118,	7.1	18
14	Geometric graphs from data to aid classification tasks with Graph Convolutional Networks. Patterns, 2021, 2, 100237.	5.9	2
15	HCGA: Highly comparative graph analysis for network phenotyping. Patterns, 2021, 2, 100227.	5.9	9
16	ProteinLens: a web-based application for the analysis of allosteric signalling on atomistic graphs of biomolecules. Nucleic Acids Research, 2021, 49, W551-W558.	14.5	22
17	Network memory in the movement of hospital patients carrying antimicrobial-resistant bacteria. Applied Network Science, 2021, 6, .	1.5	9
18	Kernel Two-Sample and Independence Tests for Nonstationary Random Processes. Engineering Proceedings, 2021, 5, 31.	0.4	0

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19	Repurposed floxacins targeting RSK4 prevent chemoresistance and metastasis in lung and bladder cancer. Science Translational Medicine, 2021, 13, .	12.4	19
20	Informing antimicrobial management in the context of COVID-19: understanding the longitudinal dynamics of C-reactive protein and procalcitonin. BMC Infectious Diseases, 2021, 21, 932.	2.9	15
21	Listening to Mental Health Crisis Needs at Scale: Using Natural Language Processing to Understand and Evaluate a Mental Health Crisis Text Messaging Service. Frontiers in Digital Health, 2021, 3, 779091.	2.8	5
22	Patterns of healthcare utilisation in children and young people: a retrospective cohort study using routinely collected healthcare data in Northwest London. BMJ Open, 2021, 11, e050847.	1.9	5
23	HyperTraPS: Inferring Probabilistic Patterns of Trait Acquisition in Evolutionary and Disease Progression Pathways. Cell Systems, 2020, 10, 39-51.e10.	6.2	14
24	Identifying naturally occurring communities of primary care providers in the English National Health Service in London. BMJ Open, 2020, 10, e036504.	1.9	1
25	Computation of Single-Cell Metabolite Distributions Using Mixture Models. Frontiers in Cell and Developmental Biology, 2020, 8, 614832.	3.7	13
26	Graph-based data clustering via multiscale community detection. Applied Network Science, 2020, 5, .	1.5	34
27	Development and Delivery of a Real-time Hospital-onset COVID-19 Surveillance System Using Network Analysis. Clinical Infectious Diseases, 2020, 72, 82-89.	5.8	14
28	Learning spatiotemporal signals using a recurrent spiking network that discretizes time. PLoS Computational Biology, 2020, 16, e1007606.	3.2	42
29	Cellular memory enhances bacterial chemotactic navigation in rugged environments. Communications Physics, 2020, 3, .	5.3	14
30	Opportunities at the Interface of Network Science and Metabolic Modeling. Frontiers in Bioengineering and Biotechnology, 2020, 8, 591049.	4.1	15
31	Scale-dependent measure of network centrality from diffusion dynamics. Physical Review Research, 2020, 2, .	3.6	13
32	New geographic model of care to manage the post-COVID-19 elective surgery aftershock in England: a retrospective observational study. BMJ Open, 2020, 10, e042392.	1.9	13
33	Semi-supervised classification on graphs using explicit diffusion dynamics. , 2020, 2, 19-33.		11
34	A primary care network analysis: natural communities of general practices in London. British Journal of General Practice, 2020, 70, bjgp20X711113.	1.4	0
35	Learning spatiotemporal signals using a recurrent spiking network that discretizes time. , 2020, 16, e1007606.		0
36	Learning spatiotemporal signals using a recurrent spiking network that discretizes time. , 2020, 16, e1007606.		0

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37	Learning spatiotemporal signals using a recurrent spiking network that discretizes time. , 2020, 16, e1007606.		0
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39	Learning spatiotemporal signals using a recurrent spiking network that discretizes time. , 2020, 16, e1007606.		Ο
40	Learning spatiotemporal signals using a recurrent spiking network that discretizes time. , 2020, 16, e1007606.		0
41	From free text to clusters of content in health records: an unsupervised graph partitioning approach. Applied Network Science, 2019, 4, 2.	1.5	17
42	Bounding the stationary distributions of the chemical master equation via mathematical programming. Journal of Chemical Physics, 2019, 151, 034109.	3.0	18
43	Data-driven unsupervised clustering of online learner behaviour. Npj Science of Learning, 2019, 4, 14.	2.8	31
44	Precision identification of high-risk phenotypes and progression pathways in severe malaria without requiring longitudinal data. Npj Digital Medicine, 2019, 2, 63.	10.9	7
45	Transitions of care across hospital settings in patients with inflammatory bowel disease. World Journal of Gastroenterology, 2019, 25, 2122-2132.	3.3	7
46	Multiscale dynamical embeddings of complex networks. Physical Review E, 2019, 99, 062308.	2.1	32
47	The Exit Time Finite State Projection Scheme: Bounding Exit Distributions and Occupation Measures of Continuous-Time Markov Chains. SIAM Journal of Scientific Computing, 2019, 41, A748-A769.	2.8	13
48	Stochastic modelling reveals mechanisms of metabolic heterogeneity. Communications Biology, 2019, 2, 108.	4.4	44
49	Collective Search With Finite Perception: Transient Dynamics and Search Efficiency. Frontiers in Physics, 2019, 6, .	2.1	7
50	Edge-based formulation of elastic network models. Physical Review Research, 2019, 1, .	3.6	3
51	Abstract 1775: Targeting RSK4 prevents both chemoresistance and metastasis in lung cancer. , 2019, , .		2
52	Integrated Systems Level Examination of Proteasome Inhibitor Stress Recovery in Myeloma Cells Reveals Druggable Vulnerabilities Linked to Multiple Metabolic Processes. Blood, 2019, 134, 1818-1818.	1.4	0
53	Abstract 1775: Targeting RSK4 prevents both chemoresistance and metastasis in lung cancer. , 2019, , .		1
54	Computational Re-design of Synthetic Genetic Oscillators for Independent Amplitude and Frequency Modulation. Cell Systems, 2018, 6, 508-520.e5.	6.2	30

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55	Geometric multiscale community detection: Markov stability and vector partitioning. Journal of Complex Networks, 2018, 6, 157-172.	1.8	8
56	Guiding interoperable electronic health records through patient-sharing networks. Npj Digital Medicine, 2018, 1, 65.	10.9	13
57	Allostery and cooperativity in multimeric proteins: bond-to-bond propensities in ATCase. Scientific Reports, 2018, 8, 11079.	3.3	13
58	Flux-dependent graphs for metabolic networks. Npj Systems Biology and Applications, 2018, 4, 32.	3.0	29
59	Stochastic models of gene transcription with upstream drives: exact solution and sample path characterization. Journal of the Royal Society Interface, 2017, 14, 20160833.	3.4	71
60	The â€~who' and â€~what' of #diabetes on Twitter. Digital Health, 2017, 3, 205520761668884.	1.8	28
61	SC3: consensus clustering of single-cell RNA-seq data. Nature Methods, 2017, 14, 483-486.	19.0	1,203
62	GlnK Facilitates the Dynamic Regulation of Bacterial Nitrogen Assimilation. Biophysical Journal, 2017, 112, 2219-2230.	0.5	24
63	Kinetic Analysis Reveals the Identity of Aβ-Metal Complex Responsible for the Initial Aggregation of Aβ in the Synapse. ACS Chemical Neuroscience, 2017, 8, 1970-1979.	3.5	22
64	Toward Precision Healthcare: Context and Mathematical Challenges. Frontiers in Physiology, 2017, 8, 136.	2.8	28
65	Window functions and sigmoidal behaviour of memristive systems. International Journal of Circuit Theory and Applications, 2016, 44, 1685-1696.	2.0	19
66	Graph partitions and cluster synchronization in networks of oscillators. Chaos, 2016, 26, 094821.	2.5	110
67	Bounding Stationary Averages of Polynomial Diffusions via Semidefinite Programming. SIAM Journal of Scientific Computing, 2016, 38, A3891-A3920.	2.8	20
68	Community detection and role identification in directed networks: Understanding the Twitter network of the care.data debate. Security Science and Technology, 2016, , 111-136.	0.5	14
69	Prediction of allosteric sites and mediating interactions through bond-to-bond propensities. Nature Communications, 2016, 7, 12477.	12.8	78
70	Linear models of activation cascades: analytical solutions and coarse-graining of delayed signal transduction. Journal of the Royal Society Interface, 2016, 13, 20160409.	3.4	17
71	Flow-Based Network Analysis of the Caenorhabditis elegans Connectome. PLoS Computational Biology, 2016, 12, e1005055.	3.2	35
72	Great cities look small. Journal of the Royal Society Interface, 2015, 12, 20150315.	3.4	20

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73	Secondary Metal Binding to Amyloid-Beta Monomer is Insignificant under Synaptic Conditions. Biophysical Journal, 2015, 108, 385a.	0.5	0
74	Emergence of Slow-Switching Assemblies in Structured Neuronal Networks. PLoS Computational Biology, 2015, 11, e1004196.	3.2	45
75	PDGFRα demarcates the cardiogenic clonogenic Sca1+ stem/progenitor cell in adult murine myocardium. Nature Communications, 2015, 6, 6930.	12.8	130
76	Amplification of small molecule-inducible gene expression via tuning of intracellular receptor densities. Nucleic Acids Research, 2015, 43, 1955-1964.	14.5	98
77	Dynamics of Cluster Synchronisation in Modular Networks: Implications for Structural and Functional Networks. Understanding Complex Systems, 2015, , 107-130.	0.6	2
78	Introduction of a Fluorescent Probe to Amyloidâ€Î² to Reveal Kinetic Insights into Its Interactions with Copper(II). Angewandte Chemie - International Edition, 2015, 54, 1227-1230.	13.8	47
79	Random Walks, Markov Processes and the Multiscale Modular Organization of Complex Networks. IEEE Transactions on Network Science and Engineering, 2014, 1, 76-90.	6.4	259
80	<i>Hhex</i> and <i>Cer1</i> Mediate the Sox17 Pathway for Cardiac Mesoderm Formation in Embryonic Stem Cells. Stem Cells, 2014, 32, 1515-1526.	3.2	24
81	Interest communities and flow roles in directed networks: the Twitter network of the UK riots. Journal of the Royal Society Interface, 2014, 11, 20140940.	3.4	52
82	Structure of complex networks: Quantifying edge-to-edge relations by failure-induced flow redistribution. Network Science, 2014, 2, 66-89.	1.0	41
83	Kinetics of the Interconversion Between Two Physiologically Important Copper-Bound Amyloid-Beta Species. Biophysical Journal, 2014, 106, 682a.	0.5	0
84	Uncovering allosteric pathways in caspase-1 using Markov transient analysis and multiscale community detection. Molecular BioSystems, 2014, 10, 2247-2258.	2.9	30
85	On memristor ideality and reciprocity. Microelectronics Journal, 2014, 45, 1363-1371.	2.0	19
86	Revealing cell assemblies at multiple levels of granularity. Journal of Neuroscience Methods, 2014, 236, 92-106.	2.5	30
87	Engineering modular and tunable genetic amplifiers for scaling transcriptional signals in cascaded gene networks. Nucleic Acids Research, 2014, 42, 9484-9492.	14.5	109
88	Kinetics of Metal Amyloid-Beta Binding and Efficacy of Ligands Targeting Metal Amyloid-Beta Interactions. Biophysical Journal, 2014, 106, 39a.	0.5	0
89	P595PDGFRalpha demarcates the cardiogenic and clonogenic Sca-1+ stem cell. Cardiovascular Research, 2014, 103, S107.4-S107.	3.8	0
90	Ideal memristors as reciprocal elements. , 2013, , .		2

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91	Tuning the dials of Synthetic Biology. Microbiology (United Kingdom), 2013, 159, 1236-1253.	1.8	87
92	Decentralised minimum-time consensus. Automatica, 2013, 49, 1227-1235.	5.0	104
93	A modular cell-based biosensor using engineered genetic logic circuits to detect and integrate multiple environmental signals. Biosensors and Bioelectronics, 2013, 40, 368-376.	10.1	191
94	The Stability of a Graph Partition: A Dynamics-Based Framework for Community Detection. Modeling and Simulation in Science, Engineering and Technology, 2013, , 221-242.	0.6	34
95	Nitrogen and Carbon Status Are Integrated at the Transcriptional Level by the Nitrogen Regulator NtrC <i>In Vivo</i> . MBio, 2013, 4, e00881-13.	4.1	66
96	Rewiring cell signalling through chimaeric regulatory protein engineering. Biochemical Society Transactions, 2013, 41, 1195-1200.	3.4	21
97	Risk factor-dependent dynamics of atopic dermatitis: modelling multi-scale regulation of epithelium homeostasis. Interface Focus, 2013, 3, 20120090.	3.0	13
98	Observability and coarse graining of consensus dynamics through the external equitable partition. Physical Review E, 2013, 88, 042805.	2.1	49
99	On periodic reference tracking using batch-mode reinforcement learning with application to gene regulatory network control. , 2013, , .		8
100	Finding role communities in directed networks using Role-Based Similarity, Markov Stability and the Relaxed Minimum Spanning Tree. , 2013, , .		18
101	Squeeze-and-breathe evolutionary Monte Carlo optimization with local search acceleration and its application to parameter fitting. Journal of the Royal Society Interface, 2012, 9, 1925-1933.	3.4	9
102	Stochastic oscillatory dynamics of generalized repressilators. , 2012, , .		2
103	Robustness of random graphs based on graph spectra. Chaos, 2012, 22, 043101.	2.5	32
104	Encoding dynamics for multiscale community detection: Markov time sweeping for the map equation. Physical Review E, 2012, 86, 026112.	2.1	58
105	Engineering and ethical perspectives in synthetic biology. EMBO Reports, 2012, 13, 584-590.	4.5	49
106	Device Properties of Bernoulli Memristors. Proceedings of the IEEE, 2012, 100, 1938-1950.	21.3	17
107	Sensory experience modifies spontaneous state dynamics in a large-scale barrel cortical model. Journal of Computational Neuroscience, 2012, 33, 323-339.	1.0	13
108	Combinatorial stresses kill pathogenic <i>Candida</i> species. Medical Mycology, 2012, 50, 699-709.	0.7	79

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109	Quantitative measure of hysteresis for memristors through explicit dynamics. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 2210-2229.	2.1	24
110	Compound stress response in stomatal closure: a mathematical model of ABA and ethylene interaction in guard cells. BMC Systems Biology, 2012, 6, 146.	3.0	36
111	Markov Dynamics as a Zooming Lens for Multiscale Community Detection: Non Clique-Like Communities and the Field-of-View Limit. PLoS ONE, 2012, 7, e32210.	2.5	116
112	Flow graphs: Interweaving dynamics and structure. Physical Review E, 2011, 84, 017102.	2.1	64
113	Transient dynamics around unstable periodic orbits in the generalized repressilator model. Chaos, 2011, 21, 023104.	2.5	25
114	Decentralised minimal-time consensus. , 2011, , .		9
115	Spectral Measure of Structural Robustness in Complex Networks. IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans, 2011, 41, 1244-1252.	2.9	191
116	Obtaining certificates for complete synchronisation of coupled oscillators. Physica D: Nonlinear Phenomena, 2011, 240, 795-803.	2.8	6
117	Protein multi-scale organization through graph partitioning and robustness analysis: application to the myosin–myosin light chain interaction. Physical Biology, 2011, 8, 055010.	1.8	50
118	Robustness of regular ring lattices based on natural connectivity. International Journal of Systems Science, 2011, 42, 1085-1092.	5.5	21
119	Solutions of weakly reversible chemical reaction networks are bounded and persistent*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 42-47.	0.4	1
120	How is a sensory stimulus represented in ongoing dynamics in the barrel cortex?. BMC Neuroscience, 2010, 11, .	1.9	0
121	Natural Connectivity of Complex Networks. Chinese Physics Letters, 2010, 27, 078902.	3.3	108
122	Switchable genetic oscillator operating in quasi-stable mode. Journal of the Royal Society Interface, 2010, 7, 1071-1082.	3.4	65
123	Stability of graph communities across time scales. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12755-12760.	7.1	358
124	Memristors and Bernoulli dynamics. , 2010, , .		20
125	Crowding-Induced Anisotropic Transport Modulates Reaction Kinetics in Nanoscale Porous Media. Journal of Physical Chemistry B, 2010, 114, 5380-5385.	2.6	18
126	The Effect of Spatially Inhomogeneous Extracellular Electric Fields on Neurons. Journal of Neuroscience, 2010, 30, 1925-1936.	3.6	169

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127	An analysis of the Map Seeking Circuit and Monte Carlo extensions. , 2009, , .		2
128	Interplay between spontaneous and sensory activities in barrel cortex: a computational study. BMC Neuroscience, 2009, 10, .	1.9	0
129	Probabilistic risk analysis of groundwater remediation strategies. Water Resources Research, 2009, 45, .	4.2	72
130	Synchronization of oscillators in complex networks. Pramana - Journal of Physics, 2008, 70, 1175-1198.	1.8	11
131	X-ray diffraction measurement of the monolayer spontaneous curvature of dioleoylphosphatidylglycerol. Chemistry and Physics of Lipids, 2008, 154, 64-67.	3.2	57
132	Transcriptome-wide noise controls lineage choice in mammalian progenitor cells. Nature, 2008, 453, 544-547.	27.8	1,007
133	A Dominated Coupling From The Past algorithm for the stochastic simulation of networks of biochemical reactions. BMC Systems Biology, 2008, 2, 42.	3.0	5
134	Biophysical Regulation of Lipid Biosynthesis in the Plasma Membrane. Biophysical Journal, 2008, 94, 2938-2954.	0.5	23
135	Chemistry across scales: from molecules to cells. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2007, 365, 2921-2934.	3.4	11
136	Full analogue electronic realisation of the Hodgkin-Huxley neuronal dynamics in weak-inversion CMOS. Annual International Conference of the IEEE Engineering in Medicine and Biology Society, 2007, 2007, 1200-3.	0.5	5
137	Perfect Sampling of the Master Equation for Gene Regulatory Networks. Biophysical Journal, 2007, 93, 401-410.	0.5	21
138	Noise characteristics of interlocked repressilators. BMC Systems Biology, 2007, 1, .	3.0	0
139	A Dynamical Model of Lipoprotein Metabolism. Bulletin of Mathematical Biology, 2007, 69, 1233-1254.	1.9	21
140	Stochastic Kinetics of Viral Capsid Assembly Based on Detailed Protein Structures. Biophysical Journal, 2006, 90, 3029-3042.	0.5	45
141	A new bound of the /spl Lscr//sub 2/[0, T]-induced norm and applications to model reduction. , 2002, , .		5
142	Self-Assembled, Deterministic Carbon Nanotube Wiring Networks This work was funded by the Office of Naval Research, DARPA, and an NSF-FRG grant Angewandte Chemie - International Edition, 2002, 41, 353.	13.8	159
143	Synchronization in Small-World Systems. Physical Review Letters, 2002, 89, 054101.	7.8	1,322
144	Titration of chaos with added noise. Proceedings of the National Academy of Sciences of the United States of America, 2001, 98, 7107-7112.	7.1	138

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145	Dynamics of one-dimensional Josephson-junction arrays. Physica D: Nonlinear Phenomena, 1998, 119, 219-226.	2.8	20
146	Superconducting states and depinning transitions of Josephson ladders. Physical Review B, 1998, 57, 1181-1199.	3.2	15
147	Pinned states in Josephson arrays: A general stability theorem. Physical Review B, 1998, 58, 5215-5218.	3.2	2
148	Row-switched states in two-dimensional underdamped Josephson-junction arrays. Physical Review B, 1998, 57, 10893-10912.	3.2	7
149	Resonances of dynamical checkerboard states in Josephson arrays with self-inductance. Physical Review B, 1997, 55, R11989-R11992.	3.2	18
150	Intrinsic phase-locked state in two-dimensional Nb Josephson arrays. IEEE Transactions on Applied Superconductivity, 1997, 7, 3103-3106.	1.7	5
151	Detection of nonlinear dynamics in short, noisy time series. Nature, 1996, 381, 215-217.	27.8	259
152	Ba2(RE)Cu3O7â^l´(RE=La, Pr, Nd, Sm, Gd): Crystal growth, structure and magnetic properties. Solid State Ionics, 1989, 32-33, 1154-1159.	2.7	3
153	Superconducting energy gap and phonon spectra in MBa2Cu3O7â^'x type materials. Physica C: Superconductivity and Its Applications, 1988, 153-155, 663-664.	1.2	2
154	REBa2Cu3O7â^îŕ (RE = Pr, Nd, Sm, Gd): Crystal growth, structure and magnetism. Solid State Ionics, 1988, 26, 167.	2.7	0
155	Infrared and Raman spectra of the new superconducting cuprate perovskites MBa2Cu3O7, M =Nd, Dy, Er, Tm. Solid State Communications, 1988, 65, 71-75.	1.9	95
156	Ba2PrCu3O7: Crystal growth, structure and magnetic properties. Solid State Communications, 1988, 67, 369-372.	1.9	29
157	Ba2Pr.34+Pr.73+Cu.73+Cu2.32+O7 : Crystal growth, structure and magnetic properties. Physica C: Superconductivity and Its Applications, 1988, 153-155, 423-424.	1.2	5
158	The rare-earth H.T.S.C. family Ba2(RE)Cu3O7; structural, electrical and magnetic studies (RE=Y,Nd,Sm,Eu,Gd,Dy,Ho,Er,Tm). Materials Research Bulletin, 1988, 23, 313-321.	5.2	27
159	Superconducting energy gap inMBa2Cu3O7â^îî-type materials. Physical Review B, 1988, 37, 652-655.	3.2	43
160	Finite horizon model reduction and the appearance of dissipation in Hamiltonian systems. , 0, , .		8
161	A biomimetic CMOS synapse. , 0, , .		3