Ralf Steuer

List of Publications by Year
in descending order

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54 papers	3,088 citations	147801 31 h-index	182427 51 g-index
61 all docs	61 docs citations	61 times ranked	3514 citing authors

#	Article	IF	Citations
1	Structural kinetic modeling of metabolic networks. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 11868-11873.	7.1	229
2	Estimating mutual information using B-spline functions–an improved similarity measure for analysing gene expression data. BMC Bioinformatics, 2004, 5, 118.	2.6	228
3	Flux Balance Analysis of Cyanobacterial Metabolism: The Metabolic Network of Synechocystis sp. PCC 6803. PLoS Computational Biology, 2013, 9, e1003081.	3.2	219
4	Review: On the analysis and interpretation of correlations in metabolomic data. Briefings in Bioinformatics, 2006, 7, 151-158.	6.5	202
5	The Metabolic Network of Synechocystis sp. PCC 6803: Systemic Properties of Autotrophic Growth Â Â. Plant Physiology, 2010, 154, 410-422.	4.8	173
6	The diversity of cyanobacterial metabolism: genome analysis of multiple phototrophic microorganisms. BMC Genomics, 2012, 13, 56.	2.8	134
7	Metabolomic networks in plants: Transitions from pattern recognition to biological interpretation. BioSystems, 2006, 83, 108-117.	2.0	121
8	The stability and robustness of metabolic states: identifying stabilizing sites in metabolic networks. Molecular Systems Biology, 2007, 3, 146.	7.2	97
9	Cellular trade-offs and optimal resource allocation during cyanobacterial diurnal growth. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E6457-E6465.	7.1	97
10	The Circadian Clock Regulates Metabolic Phenotype Rewiring Via HKDC1 and Modulates Tumor Progression and Drug Response in Colorectal Cancer. EBioMedicine, 2018, 33, 105-121.	6.1	91
11	Quantitative insights into the cyanobacterial cell economy. ELife, 2019, 8, .	6.0	82
12	Computational approaches to the topology, stability and dynamics of metabolic networks. Phytochemistry, 2007, 68, 2139-2151.	2.9	78
13	Cyanobacterial biofuels: new insights and strain design strategies revealed by computational modeling. Microbial Cell Factories, 2014, 13, 128.	4.0	76
14	Effects of stochasticity in models of the cell cycle: from quantized cycle times to noise-induced oscillations. Journal of Theoretical Biology, 2004, 228, 293-301.	1.7	74
15	Interpreting correlations in metabolomic networks. Biochemical Society Transactions, 2003, 31, 1476-1478.	3.4	70
16	From structure to dynamics of metabolic pathways: application to the plant mitochondrial TCA cycle. Bioinformatics, 2007, 23, 1378-1385.	4.1	65
17	An algorithm for the reduction of genome-scale metabolic network models to meaningful core models. BMC Systems Biology, 2015, 9, 48.	3.0	61
18	A Gentle Guide to the Analysis of Metabolomic Data. Methods in Molecular Biology, 2007, 358, 105-126.	0.9	59

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19	Enzyme allocation problems in kinetic metabolic networks: Optimal solutions are elementary flux modes. Journal of Theoretical Biology, 2014, 347, 182-190.	1.7	55
20	Constructive effects of fluctuations in genetic and biochemical regulatory systems. BioSystems, 2003, 72, 241-251.	2.0	51
21	Physiological tolerance and stoichiometric potential of cyanobacteria for hydrocarbon fuel production. Journal of Biotechnology, 2012, 162, 67-74.	3.8	51
22	Elucidating temporal resource allocation and diurnal dynamics in phototrophic metabolism using conditional FBA. Scientific Reports, 2015, 5, 15247.	3.3	48
23	Robust Signal Processing in Living Cells. PLoS Computational Biology, 2011, 7, e1002218.	3.2	47
24	Modelling cyanobacteria: from metabolism to integrative models of phototrophic growth. Journal of Experimental Botany, 2012, 63, 2259-2274.	4.8	45
25	Exploring the potential of high-density cultivation of cyanobacteria for the production of cyanophycin. Algal Research, 2018, 31, 363-366.	4.6	45
26	A probabilistic approach to identify putative drug targets in biochemical networks. Journal of the Royal Society Interface, 2011, 8, 880-895.	3.4	41
27	A Computational Analysis of Stoichiometric Constraints and Trade-Offs in Cyanobacterial Biofuel Production. Frontiers in Bioengineering and Biotechnology, 2015, 3, 47.	4.1	40
28	A Comprehensively Curated Genome-Scale Two-Cell Model for the Heterocystous Cyanobacterium Anabaena sp. PCC 7120. Plant Physiology, 2017, 173, 509-523.	4.8	39
29	Kinetic modeling of the Calvin cycle identifies flux control and stable metabolomes inSynechocystiscarbon fixation. Journal of Experimental Botany, 2019, 70, 973-983.	4.8	37
30	Identification of the light-independent phosphoserine pathway as an additional source of serine in the cyanobacterium Synechocystis sp. PCC 6803. Microbiology (United Kingdom), 2015, 161, 1050-1060.	1.8	33
31	A quantitative evaluation of ethylene production in the recombinant cyanobacterium Synechocystis sp. PCC 6803 harboring the ethylene-forming enzyme by membrane inlet mass spectrometry. Bioresource Technology, 2016, 202, 142-151.	9.6	33
32	Monte-Carlo Modeling of the Central Carbon Metabolism of Lactococcus lactis: Insights into Metabolic Regulation. PLoS ONE, 2014, 9, e106453.	2.5	31
33	Physical understanding of complex multiscale biochemical models via algorithmic simplification: Glycolysis in Saccharomyces cerevisiae. Physica D: Nonlinear Phenomena, 2010, 239, 1798-1817.	2.8	29
34	A model of optimal protein allocation during phototrophic growth. BioSystems, 2018, 166, 26-36.	2.0	27
35	Toward Multiscale Models of Cyanobacterial Growth: A Modular Approach. Frontiers in Bioengineering and Biotechnology, 2016, 4, 95.	4.1	26
36	SulfoSYS (Sulfolobus Systems Biology): towards a silicon cell model for the central carbohydrate metabolism of the archaeon Sulfolobus solfataricus under temperature variation. Biochemical Society Transactions, 2009, 37, 58-64.	3.4	25

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37	How cyanobacteria pose new problems to old methods: challenges in microarray time series analysis. BMC Bioinformatics, 2013, 14, 133.	2.6	21
38	COMPUTATION AND VISUALIZATION OF BIFURCATION SURFACES. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2008, 18, 2191-2206.	1.7	20
39	Global Network Properties. , 0, , 29-63.		19
40	Modules of co-occurrence in the cyanobacterial pan-genome reveal functional associations between groups of ortholog genes. PLoS Genetics, 2018, 14, e1007239.	3.5	19
41	Feedback, Mass Conservation and Reaction Kinetics Impact the Robustness of Cellular Oscillations. PLoS Computational Biology, 2016, 12, e1005298.	3.2	16
42	Validation and functional annotation of expression-based clusters based on gene ontology. BMC Bioinformatics, 2006, 7, 380.	2.6	14
43	Modelling microbial communities using biochemical resource allocation analysis. Journal of the Royal Society Interface, 2019, 16, 20190474.	3.4	14
44	Elucidating the adaptation and temporal coordination of metabolic pathways using in-silico evolution. BioSystems, 2014, 117, 68-76.	2.0	10
45	Resource allocation in metabolic networks: kinetic optimization and approximations by FBA. Biochemical Society Transactions, 2015, 43, 1195-1200.	3.4	10
46	Optimal proteome allocation strategies for phototrophic growth in a light-limited chemostat. Microbial Cell Factories, 2019, 18, 165.	4.0	10
47	Deciphering the physiological response of Escherichia coli under high ATP demand. Molecular Systems Biology, 2021, 17, e10504.	7.2	10
48	Activity and functional properties of the isocitrate lyase in the cyanobacterium Cyanothece sp. PCC 7424. Microbiology (United Kingdom), 2017, 163, 731-744.	1.8	9
49	Optimizing cyanobacterial product synthesis: Meeting the challenges. Bioengineered, 2016, 7, 490-496.	3.2	7
50	Measuring Distances Between Variables by Mutual Information. , 2005, , 81-90.		6
51	Physical understanding via reduction of complex multiscale models: Glycolysis in saccharomyces cerevisiae. , 2008, , .		4
52	Fastâ€growing phototrophic microorganisms and the productivity of phototrophic cultures. Biotechnology and Bioengineering, 2022, 119, 2261-2267.	3.3	4
53	Guaranteed and Randomized Methods for Stability Analysis of Uncertain Metabolic Networks. Lecture Notes in Control and Information Sciences, 2010, , 297-307.	1.0	1
54	Time-Optimal Adaptation in Metabolic Network Models. Frontiers in Molecular Biosciences, 0, 9, .	3.5	1