

Gábor Szederkányi

List of Publications by Year in descending order

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86
papers

854
citations

567144

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89
all docs

89
docs citations

89
times ranked

400
citing authors

#	ARTICLE	IF	CITATIONS
1	Inference of complex biological networks: distinguishability issues and optimization-based solutions. BMC Systems Biology, 2011, 5, 177.	3.0	66
2	Hamiltonian view on process systems. AIChE Journal, 2001, 47, 1819-1831.	1.8	61
3	Computing sparse and dense realizations of reaction kinetic systems. Journal of Mathematical Chemistry, 2010, 47, 551-568.	0.7	56
4	Finding complex balanced and detailed balanced realizations of chemical reaction networks. Journal of Mathematical Chemistry, 2011, 49, 1163-1179.	0.7	55
5	Nonlinear model predictive control with logic constraints for COVID-19 management. Nonlinear Dynamics, 2020, 102, 1965-1986.	2.7	55
6	Local dissipative Hamiltonian description of reversible reaction networks. Systems and Control Letters, 2008, 57, 554-560.	1.3	50
7	Computing weakly reversible linearly conjugate chemical reaction networks with minimal deficiency. Mathematical Biosciences, 2013, 241, 88-98.	0.9	37
8	Identifiability analysis and parameter estimation of a single Hodgkin-Huxley type voltage dependent ion channel under voltage step measurement conditions. Neurocomputing, 2012, 77, 178-188.	3.5	32
9	A linear programming approach to weak reversibility and linear conjugacy of chemical reaction networks. Journal of Mathematical Chemistry, 2012, 50, 274-288.	0.7	32
10	Semistability of complex balanced kinetic systems with arbitrary time delays. Systems and Control Letters, 2018, 114, 38-43.	1.3	24
11	Computing zero deficiency realizations of kinetic systems. Systems and Control Letters, 2015, 81, 24-30.	1.3	22
12	Kinetic feedback design for polynomial systems. Journal of Process Control, 2016, 41, 56-66.	1.7	22
13	Microsimulation based quantitative analysis of COVID-19 management strategies. PLoS Computational Biology, 2022, 18, e1009693.	1.5	19
14	Parameter Estimation of a Simple Primary Circuit Model of a VVER Plant. IEEE Transactions on Nuclear Science, 2008, 55, 2643-2653.	1.2	18
15	Throwing motion generation using nonlinear optimization on a 6-degree-of-freedom robot manipulator. , 2009, , .		18
16	Comment on "Identifiability of chemical reaction networks" by G. Craciun and C. Pantea. Journal of Mathematical Chemistry, 2009, 45, 1172-1174.	0.7	15
17	Computing all possible graph structures describing linearly conjugate realizations of kinetic systems. Computer Physics Communications, 2016, 204, 11-20.	3.0	14
18	Approximation of delayed chemical reaction networks. Reaction Kinetics, Mechanisms and Catalysis, 2018, 123, 403-419.	0.8	14

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19	CRNreals: a toolbox for distinguishability and identifiability analysis of biochemical reaction networks. <i>Bioinformatics</i> , 2012, 28, 1549-1550.	1.8	13
20	The underlying linear dynamics of some positive polynomial systems. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2012, 376, 3129-3134.	0.9	12
21	Reaction network realizations of rational biochemical systems and their structural properties. <i>Journal of Mathematical Chemistry</i> , 2015, 53, 1657-1686.	0.7	12
22	Realizations of kinetic differential equations. <i>Mathematical Biosciences and Engineering</i> , 2020, 17, 862-892.	1.0	12
23	Hodgkin-Huxley type modelling and parameter estimation of GnRH neurons. <i>BioSystems</i> , 2010, 100, 198-207.	0.9	11
24	Polynomial time algorithms to determine weakly reversible realizations of chemical reaction networks. <i>Journal of Mathematical Chemistry</i> , 2014, 52, 1386-1404.	0.7	9
25	Linear conjugacy in biochemical reaction networks with rational reaction rates. <i>Journal of Mathematical Chemistry</i> , 2016, 54, 1658-1676.	0.7	9
26	Uniqueness of feasible equilibria for mass action law (MAL) kinetic systems. <i>Journal of Process Control</i> , 2016, 48, 41-71.	1.7	9
27	Improved algorithm for computing the domain of attraction of rational nonlinear systems. <i>European Journal of Control</i> , 2018, 39, 53-67.	1.6	9
28	Trajectory tracking control of a 6-degree-of-freedom robot arm using nonlinear optimization. , 2008, , .		7
29	Identification and dynamic inversion-based control of a pressurizer at the Paks NPP. <i>Control Engineering Practice</i> , 2010, 18, 554-565.	3.2	7
30	Using LMS-100 laser rangefinder for indoor metric map building. , 2010, , .		7
31	A model structure-driven hierarchical decentralized stabilizing control structure for process networks. <i>Journal of Process Control</i> , 2014, 24, 1358-1370.	1.7	7
32	Distributed control of interconnected Chemical Reaction Networks with delay. <i>Journal of Process Control</i> , 2018, 71, 52-62.	1.7	7
33	Computational method for estimating the domain of attraction of discrete-time uncertain rational systems. <i>European Journal of Control</i> , 2019, 49, 68-83.	1.6	7
34	Reconstruction of Epidemiological Data in Hungary Using Stochastic Model Predictive Control. <i>Applied Sciences (Switzerland)</i> , 2022, 12, 1113.	1.3	7
35	Two-level controller design for an active suspension system. , 2008, , .		6
36	Modeling and identification of a nuclear reactor with temperature effects and Xenon poisoning. , 2009, , .		6

#	ARTICLE	IF	CITATIONS
37	Parametric uniqueness of deficiency zero reaction networks. Journal of Mathematical Chemistry, 2012, 50, 1-8.	0.7	6
38	An improved method for estimating the domain of attraction of nonlinear systems containing rational functions. Journal of Physics: Conference Series, 2015, 659, 012038.	0.3	6
39	A computational approach to the structural analysis of uncertain kinetic systems. Computer Physics Communications, 2018, 228, 83-95.	3.0	6
40	Computation of COVID-19 epidemiological data in Hungary using dynamic model inversion. , 2021, , .		6
41	Combined LPV and nonlinear control of an active suspension system. , 2007, , .		5
42	COMPUTING ALL SPARSE KINETIC STRUCTURES FOR A LORENZ SYSTEM USING OPTIMIZATION. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2013, 23, 1350141.	0.7	5
43	Reduced linear fractional representation of nonlinear systems for stability analysis \hat{z} \hat{z} The research was partially supported by the grant K115694 of the National Research, Development and Innovation Office - NKFIH. The project has also been supported by the European Union, co-financed by the European Social Fund through the grant EFOP-3.6.3-VEKOP-16-2017-00002. The research leading to the results presented in the paper was supported (also) by the János Bolyai Research Scholarship of the Hungarian Academy of Sciences. IFAC-PapersOnLine, 2018, 51, 37-42.	0.5	5
44	Developing an integrated software environment for mobile robot navigation and control. , 2010, , .		4
45	Optimization-based design of kinetic feedbacks for nonnegative polynomial systems. , 2013, , .		4
46	Efficient Computation of All Distinct Realization Structures of Kinetic Systems. IFAC-PapersOnLine, 2016, 49, 194-200.	0.5	4
47	Persistence and stability of a class of kinetic compartmental models. Journal of Mathematical Chemistry, 2022, 60, 1001-1020.	0.7	4
48	Computing reaction kinetic realizations of positive nonlinear systems using mixed integer programming. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 981-986.	0.4	3
49	Computing dynamically equivalent realizations of biochemical reaction networks with mass conservation. , 2013, , .		3
50	Induced L2-gain computation for rational LPV systems using Finsler's lemma and minimal generators. Systems and Control Letters, 2020, 142, 104738.	1.3	3
51	Implementation of dynamic inversion-based control of a pressurizer at the Paks NPP. , 2008, , .		2
52	Ergonomic remote control technique for horizontal rotors equipped UAVs. , 2009, , .		2
53	Kinetic feedback computation for polynomial systems to achieve weak reversibility and minimal deficiency. , 2014, , .		2
54	Stabilizing kinetic feedback design using semidefinite programming. IFAC-PapersOnLine, 2016, 49, 12-17.	0.5	2

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55	Kinetic realization of delayed polynomial dynamical models. IFAC-PapersOnLine, 2019, 52, 45-50.	0.5	2
56	Optimal Solar Panel Area Computation and Temperature Tracking for a CubeSat System using Model Predictive Control. SPIIRAS Proceedings, 2020, 19, 564-593.	0.8	2
57	Identifiability study of a pressurizer in a pressurized water nuclear power plant. , 2009, , .		1
58	Model synthesis identification a Hodgkin-Huxley-type neuron model. , 2009, , .		1
59	Determining biochemical reaction network structures for kinetic polynomial models with uncertain coefficients. , 2012, , .		1
60	Hamiltonian Feedback Design for Mass Action Law Chemical Reaction Networks. IFAC-PapersOnLine, 2015, 48, 158-163.	0.5	1
61	Analysis-based parameter estimation of an in vitro transcription-translation system. , 2015, , .		1
62	Structural analysis of kinetic systems with uncertain parameters. IFAC-PapersOnLine, 2016, 49, 24-27.	0.5	1
63	Fuel tank temperature control of a time-varying CubeSat model. , 2019, , .		1
64	Passivity analysis of rational LPV systems using Finsler's lemma. , 2019, , .		1
65	On the Verification and Correction of Large-Scale Kinetic Models in Systems Biology. Lecture Notes in Computer Science, 2013, , 206-219.	1.0	1
66	Disturbance Attenuation via Nonlinear Feedback for Chemical Reaction Networks. IFAC-PapersOnLine, 2020, 53, 11497-11502.	0.5	1
67	Lyapunov function computation for autonomous systems with complex dynamic behavior. European Journal of Control, 2022, 65, 100619.	1.6	1
68	ATP production optimization in biochemical mass action models with protein turnover. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 42-47.	0.4	0
69	Parametric analysis of dynamically equivalent reaction network models. , 2014, , .		0
70	Computing core reactions of uncertain polynomial kinetic systems. , 2015, , .		0
71	Modeling of the Citric Acid Cycle and its Two Shuttle Systems. , 2018, , .		0
72	Model Transformations and Equivalence Classes. , 2018, , 37-54.		0

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73	Basic Notions. , 2018, , 9-36.		0
74	Model Analysis. , 2018, , 55-90.		0
75	Stabilizing Feedback Control Design. , 2018, , 91-106.		0
76	Observer-based Diagnosis in Chemical Reaction Networks. , 2019, , .		0
77	Reachability Analysis of Low-Order Discrete State Reaction Networks Obeying Conservation Laws. Complexity, 2019, 2019, 1-13.	0.9	0
78	Stabilization of time delayed nonnegative polynomial systems through kinetic realization. , 2019, , .		0
79	Chemical Reaction Networks as General Representations of Positive Polynomial Systems. , 2019, , .		0
80	Computational Methods for Identification and Modelling of Complex Biological Systems. Complexity, 2019, 2019, 1-3.	0.9	0
81	Stabilizing feedback design for time delayed polynomial systems using kinetic realizations. European Journal of Control, 2021, 57, 163-171.	1.6	0
82	Analysis and Control of Nonnegative Dynamical Models with a Network Structure. , 2020, , .		0
83	Structural reduction of CRNs with linear sub-CRNs. IFAC-PapersOnLine, 2021, 54, 149-154.	0.5	0
84	Power Regulation and Linearization-Based Control Design of a Small Satellite. , 2019, , .		0
85	Lyapunov function computation for nonlinear systems through dynamical embedding “ A case study. , 2021, , .		0
86	Computing Different Realizations of Linear Dynamical Systems with Embedding Eigenvalue Assignment. Acta Cybernetica, 0, , .	0.5	0