Matthew M Peet

List of Publications by Year
in descending order

76 papers	732 citations	840585 11 h-index	677027 22 g-index
78 all docs	78 docs citations	78 times ranked	410 citing authors

#	Article	IF	Citations
1	Positive Forms and Stability of Linear Time-Delay Systems. SIAM Journal on Control and Optimization, 2009, 47, 3237-3258.	1.1	78
2	Exponentially Stable Nonlinear Systems Have Polynomial Lyapunov Functions on Bounded Regions. IEEE Transactions on Automatic Control, 2009, 54, 979-987.	3.6	56
3	Stability Analysis of Sampled-Data Systems Using Sum of Squares. IEEE Transactions on Automatic Control, 2013, 58, 1620-1625.	3.6	48
4	Analysis of Polynomial Systems With Time Delays via the Sum of Squares Decomposition. IEEE Transactions on Automatic Control, 2009, 54, 1058-1064.	3.6	40
5	Heterogeneous Hydrogel Structures with Spatiotemporal Reconfigurability using Addressable and Tunable Voxels. Advanced Materials, 2021, 33, e2005906.	11.1	37
6	Stability analysis of linear systems with time-varying delays: Delay uncertainty and quenching. , 2007, , .		34
7	A Converse Sum of Squares Lyapunov Result With a Degree Bound. IEEE Transactions on Automatic Control, 2012, 57, 2281-2293.	3.6	33
8	Kinematic Modeling and Trajectory Tracking Control of an Octopus-Inspired Hyper-Redundant Robot. IEEE Robotics and Automation Letters, 2020, 5, 3460-3467.	3.3	30
9	Positive Forms and Stability of Linear Time-Delay Systems. , 2006, , .		27
10	Polynomial optimization with applications to stability analysis and control - Alternatives to sum of squares. Discrete and Continuous Dynamical Systems - Series B, 2015, 20, 2383-2417.	0.5	26
11	Reducing the Complexity of the Sum-of-Squares Test for Stability of Delayed Linear Systems. IEEE Transactions on Automatic Control, 2011, 56, 229-234.	3.6	17
12	Global Stability Analysis of a Nonlinear Model of Internet Congestion Control With Delay. IEEE Transactions on Automatic Control, 2007, 52, 553-559.	3.6	16
13	A generalization of Bellman's equation with application to path planning, obstacle avoidance and invariant set estimation. Automatica, 2021, 127, 109510.	3.0	14
14	LMI parametrization of Lyapunov functions for infinite-dimensional systems: A framework. , 2014, , .		13
15	Estimating the region of attraction using polynomial optimization: A converse Lyapunov result. , 2017, , .		13
16	A converse sum-of-squares Lyapunov result: An existence proof based on the Picard iteration. , 2010, , .		12
17	Representation of networks and systems with delay: DDEs, DDFs, ODE–PDEs and PIEs. Automatica, 2021, 127, 109508.	3.0	12
18	A Dual to Lyapunov's Second Method for Linear Systems With Multiple Delays and Implementation Using SOS. IEEE Transactions on Automatic Control, 2019, 64, 944-959.	3.6	11

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19	New Insights on the Control and Function of Octopus Suckers. Advanced Intelligent Systems, 2020, 2, 1900154.	3.3	11
20	Solving Large-Scale Robust Stability Problems by Exploiting the Parallel Structure of Polya's Theorem. IEEE Transactions on Automatic Control, 2013, 58, 1931-1947.	3.6	10
21	PIETOOLS: A Matlab Toolbox for Manipulation and Optimization of Partial Integral Operators. , 2020, , .		10
22	On the conservatism of the sum-of-squares method for analysis of time-delayed systems. Automatica, 2011, 47, 2406-2411.	3.0	9
23	Full-State Feedback of Delayed Systems using SOS: A New Theory of Duality. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 24-29.	0.4	9
24	Decentralized Control of Distributed Actuation in a Segmented Soft Robot Arm. , 2018, , .		9
25	New Computational Tools for Modeling Chronic Myelogenous Leukemia. Mathematical Modelling of Natural Phenomena, 2009, 4, 119-139.	0.9	8
26	A Partial Integral Equation (PIE) representation of coupled linear PDEs and scalable stability analysis using LMIs. Automatica, 2021, 125, 109473.	3.0	8
27	Designing observer-based controllers for PDE systems: A heat-conducting rod with point observation and boundary control. , 2011, , .		7
28	Duality and H_∞-Optimal Control Of Coupled ODE-PDE Systems. , 2020, , .		7
29	An extension of the weierstrass approximation theorem to linear varieties: application to delay systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 152-155.	0.4	6
30	Inverses of Positive Linear Operators and State Feedback Design for Time-Delay Systems*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2009, 42, 278-283.	0.4	6
31	A parallel-computing solution for optimization of polynomials. , 2010, , .		6
32	Constructing Lyapunov Functions for nonlinear delay-differential equations using semidefinite programming. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 1235-1239.	0.4	5
33	Solving dynamic programming with supremum terms in the objective and application to optimal battery scheduling for electricity consumers subject to demand charges. , 2017, , .		5
34	Using Trajectory Measurements to Estimate the Region of Attraction of Nonlinear Systems. , 2018, , .		5
35	Relaxing The Hamilton Jacobi Bellman Equation To Construct Inner And Outer Bounds On Reachable Sets. , 2019, , .		5
36	A Generalized LMI Formulation for Input-Output Analysis of Linear Systems of ODEs Coupled with PDEs. , 2019, , .		5

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37	Robust Analysis of Uncertain ODE-PDE Systems Using PI Multipliers, PIEs and LPIs. , 2020, , .		5
38	Decentralized computation for robust stability of large-scale systems with parameters on the hypercube. , 2012, , .		4
39	Constructing piecewise-polynomial lyapunov functions for local stability of nonlinear systems using Handelman's theorem. , 2014, , .		4
40	Multi-objective dynamic programming for constrained optimization of non-separable objective functions with application in energy storage. , 2016, , .		4
41	Inversion of Separable Kernel Operators in Coupled Differential-Functional Equations and Application to Controller Synthesis * *This work was supported by National Natural Science Foundation of PR China under Grant 61374090, 61503189, the Natural Science Foundation of Jiangsu Province under Grant BK20150926. This work was also supported by NSF Grants 1538374, 1301660, 1301851. IFAC PapersOnLine, 2017, 50, 6513-6518.	0.5	4
42	A New State-Space Representation for Coupled PDEs and Scalable Lyapunov Stability Analysis in the SOS Framework. , 2018, , .		4
43	Estimator-Based Output-Feedback Stabilization of Linear Multi-Delay Systems using SOS. , 2019, , .		4
44	A Convex Solution of the H_infty-Optimal Controller Synthesis Problem for Multidelay Systems. SIAM Journal on Control and Optimization, 2020, 58, 1547-1578.	1.1	4
45	Computing Input-Ouput Properties of Coupled Linear PDE systems. , 2019, , .		4
46	Converse Lyapunov Functions and Converging Inner Approximations to Maximal Regions of Attraction of Nonlinear Systems. , 2021, , .		4
47	Decentralized computation for robust stability analysis of large state-space systems using Polya's theorem. , 2012, , .		3
48	Stability analysis of parabolic linear PDEs with two spatial dimensions using Lyapunov method and SOS. , 2015, , .		3
49	Optimal thermostat programming and optimal electricity rates for customers with demand charges. , 2015, , .		3
50	The orbital mechanics of space elevator launch systems. Acta Astronautica, 2021, 179, 153-171.	1.7	3
51	Positivity of kernel functions for systems with communication delay. , 2007, , .		2
52	Using polynomial semi-separable kernels to construct infinite-dimensional Lyapunov functions. , 2008, , .		2
53	SOS for sampled-data systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 1441-1446.	0.4	2
54	Decentralized Polya's algorithm for stability analysis of large-scale nonlinear systems. , 2013, , .		2

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55	Stability of State-Dependent Delay System. , 2013, , .		2
56	Global Stability Analysis of Nonlinear Sampled-Data Systems Using Convex Methods. Advances in Delays and Dynamics, 2014, , 215-227.	0.4	2
57	Optimal state feedback boundary control of parabolic PDEs using SOS polynomials. , 2016, , .		2
58	A convex reformulation of the controller synthesis problem for MIMO single-delay systems with implementation in SOS. , 2017, , .		2
59	SOS for Systems with Multiple Delays: Part 1. H_∞-Optimal Control. , 2019, , .		2
60	SOS for Systems with Multiple Delays: Part 2. H_∞-Optimal Estimation. , 2019, , .		2
61	Extensions of the Dynamic Programming Framework: Battery Scheduling, Demand Charges, and Renewable Integration. IEEE Transactions on Automatic Control, 2021, 66, 1602-1617.	3.6	2
62	Minimal Differential Difference Realizations of Delay Differential, Differential Difference, and Neutral Delay Systems. , 2021, 5, 1471-1476.		2
63	Using the Positivstellensatz for Stability Analysis of Neutral Delay Systems in the Frequency Domain. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 156-161.	0.4	1
64	A generalized chain rule and a bound on the continuity of solutions and converse Lyapunov functions. , 2009, , .		1
65	Reducing the computational cost of the sum-of-squares stability test for time-delayed systems. , 2010, , .		1
66	A sum-of-squares approach to the analysis of Zeno stability in polynomial hybrid systems. , 2013, , .		1
67	A Convex Reformulation of the Controller Synthesis Problem for Infinite-Dimensional Systems using Linear Operator Inequalities (LOIs) with Application to MIMO Multi-Delay Systems. , 2018, , .		1
68	$\mathcal{L}_\infty$ Optimal Estimation for Linear Coupled PDE Systems. , 2019, , .		1
69	Inversion of Separable Kernel Operator and Its Application in Control Synthesis. Advances in Delays and Dynamics, 2019, , 265-280.	0.4	1
70	Global Stability Analysis of Primal Internet Congestion Control Schemes with Heterogeneous Delays. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 2913-2918.	0.4	0
71	Accelerating Convergence of Sum-of-Square Stability Analysis of Coupled Differential-Difference Equations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 138-143.	0.4	0
72	Biological circuit models of immune regulatory response: A decentralized control system. , 2011, , .		0

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73	Using SDP to Parameterize Universal Kernel Functions. , 2019, , .		0
74	SOS for Nonlinear Delayed Models in Biology and Networking. Lecture Notes in Control and Information Sciences, 2009, , 133-143.	0.6	0
75	SOS Methods for Stability Analysis of Neutral Differential Systems. Lecture Notes in Control and Information Sciences, 2009, , 97-107.	0.6	0
76	Efficient Data Structures for Representation of Polynomial Optimization Problems: Implementation in SOSTOOLS. , 2022, , 1-1.		0