Didier Henrion

List of Publications by Year
in descending order

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123 papers	3,139 citations	257450 24 h-index	189892 50 g-index
123 all docs	123 docs citations	123 times ranked	1579 citing authors

#	Article	IF	Citations
1	Cone-Copositive Lyapunov Functions for Complementarity Systems: Converse Result and Polynomial Approximation. IEEE Transactions on Automatic Control, 2022, 67, 1253-1268.	5.7	2
2	Moments and convex optimization for analysis and control of nonlinear PDEs. Handbook of Numerical Analysis, 2022, , 339-366.	1.8	4
3	Globally Optimal Solution to Inverse Kinematics of 7DOF Serial Manipulator. IEEE Robotics and Automation Letters, 2022, 7, 6012-6019.	5.1	6
4	Parabolic set simulation for reachability analysis of linear time-invariant systems with integral quadratic constraint. European Journal of Control, 2021, 58, 152-167.	2.6	5
5	Exact algorithms for semidefinite programs with degenerate feasible set. Journal of Symbolic Computation, 2021, 104, 942-959.	0.8	3
6	Measures and LMIs for Validation of an Aircraft with MRAC and Uncertain Actuator Dynamics. , 2021, , .		1
7	Dual optimal design and the Christoffelâ€“Darboux polynomial. Optimization Letters, 2021, 15, 3-8.	1.6	2
8	Convex Computation of Extremal Invariant Measures of Nonlinear Dynamical Systems and Markov Processes. Journal of Nonlinear Science, 2021, 31, 1.	2.1	8
9	Semi-algebraic Approximation Using Christoffelâ€“Darboux Kernel. Constructive Approximation, 2021, 54, 391-429.	3.0	10
10	Peak Estimation Recovery and Safety Analysis. , 2021, , .		0
11	Global optimality in minimum compliance topology optimization of frames and shells by moment-sum-of-squares hierarchy. Structural and Multidisciplinary Optimization, 2021, 64, 1963.	3.5	2
12	Peak Estimation Recovery and Safety Analysis. , 2021, 5, 1982-1987.		11
13	Peak Estimation for Uncertain and Switched Systems. , 2021, , .		6
14	Real root finding for low rank linear matrices. Applicable Algebra in Engineering, Communications and Computing, 2020, 31, 101-133.	0.5	0
15	Measures and LMIs for Lateral F-16 MRAC Validation. , 2020, , .		1
16	Approximating regions of attraction of a sparse polynomial differential system. IFAC-PapersOnLine, 2020, 53, 3266-3271.	0.9	11
17	Computation of Lyapunov Functions under State Constraints using Semidefinite Programming Hierarchies. IFAC-PapersOnLine, 2020, 53, 6281-6286.	0.9	1
18	Parabolic Set Simulation for Reachability Analysis of Linear Time Invariant Systems with Integral Quadratic Constraint. , 2019, , .		2

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19	Inner Approximations of the Maximal Positively Invariant Set for Polynomial Dynamical Systems. , 2019, 3, 733-738.		17
20	Optimal control problems with oscillations, concentrations and discontinuities. Automatica, 2019, 103, 159-165.	5.0	8
21	Measures and LMIs for Adaptive Control Validation. , 2019, , .		2
22	Maximal Positively Invariant Set Determination for Transient Stability Assessment in Power Systems. , 2019, , .		6
23	Approximate optimal designs for multivariate polynomial regression. Annals of Statistics, 2019, 47, .	2.6	27
24	SPECTRA â€“ a Maple library for solving linear matrix inequalities in exact arithmetic. Optimization Methods and Software, 2019, 34, 62-78.	2.4	8
25	Convergence rates of moment-sum-of-squares hierarchies for volume approximation of semialgebraic sets. Optimization Letters, 2018, 12, 435-442.	1.6	5
26	Exact Algorithms for Semidefinite Programs with Degenerate Feasible Set. , 2018, , .		1
27	Convergence rates of moment-sum-of-squares hierarchies for optimal control problems. Systems and Control Letters, 2017, 100, 1-5.	2.3	12
28	Simple approximations of semialgebraic sets and their applications to control. Automatica, 2017, 78, 110-118.	5.0	21
29	Chapter 10: Conic Linear Optimization for Nonlinear Optimal Control. , 2017, , 121-133.		1
30	Semi-definite relaxations for optimal control problems with oscillation and concentration effects. ESAIM - Control, Optimisation and Calculus of Variations, 2017, 23, 95-117.	1.3	6
31	Mini-Workshop: Applied Koopmanism. Oberwolfach Reports, 2016, 13, 297-340.	0.0	0
32	Symmetries and analytical solutions of the Hamiltonâ€“Jacobiâ€“Bellman equation for a class of optimal controlÂproblems. Optimal Control Applications and Methods, 2016, 37, 749-764.	2.1	5
33	Credible autocoding of convex optimization algorithms. Optimization and Engineering, 2016, 17, 781-812.	2.4	7
34	Exact Algorithms for Linear Matrix Inequalities. SIAM Journal on Optimization, 2016, 26, 2512-2539.	2.0	31
35	Minimizing the sum of many rational functions. Mathematical Programming Computation, 2016, 8, 83-111.	4.8	28
36	Controller design and value function approximation for nonlinear dynamical systems. Automatica, 2016, 67, 54-66.	5.0	16

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37	Modal occupation measures and LMI relaxations for nonlinear switched systems control. Automatica, 2016, 64, 143-154.	5.0	13
38	Real root finding for determinants of linear matrices. Journal of Symbolic Computation, 2016, 74, 205-238.	0.8	9
39	Strong duality in Lasserreâ€™s hierarchy for polynomial optimization. Optimization Letters, 2016, 10, 3-10.	1.6	32
40	Rank-Constrained Fundamental Matrix Estimation by Polynomial Global Optimization Versus the Eight-Point Algorithm. Journal of Mathematical Imaging and Vision, 2015, 53, 42-60.	1.3	12
41	Real Root Finding for Rank Defects in Linear Hankel Matrices. , 2015, , .		5
42	Semidefinite Approximations of Projections and Polynomial Images of SemiAlgebraic Sets. SIAM Journal on Optimization, 2015, 25, 2143-2164.	2.0	15
43	Hand-eye and robot-world calibration by global polynomial optimization. , 2014, , .		54
44	Convex Computation of the Region of Attraction of Polynomial Control Systems. IEEE Transactions on Automatic Control, 2014, 59, 297-312.	5.7	196
45	Mean Squared Error Minimization for Inverse Moment Problems. Applied Mathematics and Optimization, 2014, 70, 83-110.	1.6	8
46	Measures and LMIs for Impulsive Nonlinear Optimal Control. IEEE Transactions on Automatic Control, 2014, 59, 1374-1379.	5.7	16
47	Convex Computation of the Maximum Controlled Invariant Set For Polynomial Control Systems. SIAM Journal on Control and Optimization, 2014, 52, 2944-2969.	2.1	91
48	Design of Marx generators as a structured eigenvalue assignment. Automatica, 2014, 50, 2709-2717.	5.0	5
49	Approximating Pareto curves using semidefinite relaxations. Operations Research Letters, 2014, 42, 432-437.	0.7	10
50	Controller design and region of attraction estimation for nonlinear dynamical systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 2310-2316.	0.4	10
51	Finding largest small polygons with GloptiPoly. Journal of Global Optimization, 2013, 56, 1017-1028.	1.8	8
52	Positive Polynomial Matrices for LPV Controller Synthesis. Lecture Notes in Control and Information Sciences, 2013, , 87-96.	1.0	2
53	Convex computation of the maximum controlled invariant set for discrete-time polynomial control systems. , 2013, , .		13
54	Optimal switching control design for polynomial systems: an LMI approach. , 2013, , .		11

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55	Estimation of consistent parameter sets for continuous-time nonlinear systems using occupation measures and LMI relaxations. , 2013, , .		5
56	Moment LMI approach to LTV impulsive control. , 2013, , .		8
57	Inner approximations of the region of attraction for polynomial dynamical systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2013, 46, 534-539.	0.4	39
58	Set approximation via minimum-volume polynomial sublevel sets. , 2013, , .		11
59	Convex computation of the region of attraction of polynomial control systems?. , 2013, , .		13
60	Optimization on linear matrix inequalities for polynomial systems control. Les Cours Du CIRM, 2013, 3, 1-44.	0.4	12
61	Semidefinite programming for optimizing convex bodies under width constraints. Optimization Methods and Software, 2012, 27, 1073-1099.	2.4	7
62	Convex inner approximations of nonconvex semialgebraic sets applied to fixed-order controller design. International Journal of Control, 2012, 85, 1083-1092.	1.9	7
63	Measures and LMI for impulsive optimal control with applications to space rendezvous problems. , 2012, , .		9
64	Measures and LMI for space launcher robust control validation. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 236-241.	0.4	7
65	Projection Methods in Conic Optimization. Profiles in Operations Research, 2012, , 565-600.	0.4	27
66	Positive trigonometric polynomials for strong stability of difference equations. Automatica, 2012, 48, 2207-2212.	5.0	12
67	Inner Approximations for Polynomial Matrix Inequalities and Robust Stability Regions. IEEE Transactions on Automatic Control, 2012, 57, 1456-1467.	5.7	31
68	Moment and SDP relaxation techniques for smooth approximations of problems involving nonlinear differential equations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 10887-10892.	0.4	4
69	Semidefinite Representation of Convex Hulls of Rational Varieties. Acta Applicandae Mathematicae, 2011, 115, 319-327.	1.0	16
70	A hierarchy of LMI inner approximations of the set of stable polynomials. Automatica, 2011, 47, 1455-1460.	5.0	2
71	Projection methods for conic feasibility problems: applications to polynomial sum-of-squares decompositions. Optimization Methods and Software, 2011, 26, 23-46.	2.4	17
72	Detecting rigid convexity of bivariate polynomials. Linear Algebra and Its Applications, 2010, 432, 1218-1233.	0.9	16

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73	Polynomial LPV synthesis applied to turbofan engines. Control Engineering Practice, 2010, 18, 1077-1083.	5.5	89
74	Hermite matrix in Lagrange basis for scaling static output feedback polynomial matrix inequalities. International Journal of Control, 2010, 83, 2494-2505.	1.9	4
75	Advanced LMI based analysis and design for Acrobot walking. International Journal of Control, 2010, 83, 1641-1652.	1.9	19
76	GloptiPoly 3: moments, optimization and semidefinite programming. Optimization Methods and Software, 2009, 24, 761-779.	2.4	376
77	Guest Editorial: Special Issue on Positive Polynomials in Control. IEEE Transactions on Automatic Control, 2009, 54, 935-936.	5.7	22
78	An improved Toeplitz algorithm for polynomial matrix null-space computation. Applied Mathematics and Computation, 2009, 207, 256-272.	2.2	13
79	Optimal Low-Frequency Filter Design for Uncertain 2-1 Sigma-Delta Modulators. IEEE Signal Processing Letters, 2009, 16, 362-365.	3.6	7
80	Strong Stability of Neutral Equations with an Arbitrary Delay Dependency Structure. SIAM Journal on Control and Optimization, 2009, 48, 763-786.	2.1	38
81	Nonlinear Optimal Control via Occupation Measures and LMI-Relaxations. SIAM Journal on Control and Optimization, 2008, 47, 1643-1666.	2.1	173
82	On Convexity of the Frequency Response of a Stable Polynomial. IEEE Transactions on Automatic Control, 2008, 53, 1062-1066.	5.7	2
83	Robust Filter Design for Uncertain 2-1 Sigma-Delta Modulators via the Central Polynomial Method. IEEE Signal Processing Letters, 2008, 15, 737-740.	3.6	5
84	Plane geometry and convexity of polynomial stability regions. , 2008, , .		4
85	Nonlinear optimal control synthesis via occupation measures. , 2008, , .		20
86	Fixed-Order Robust H_{infty} Controller Design With Regional Pole Assignment. IEEE Transactions on Automatic Control, 2007, 52, 1959-1963.	5.7	84
87	Quadratic separation for feedback connection of an uncertain matrix and an implicit linear transformation. Automatica, 2007, 43, 795-804.	5.0	113
88	Globally Optimal Estimates for Geometric Reconstruction Problems. International Journal of Computer Vision, 2007, 74, 3-15.	15.6	61
89	Stabilization via Nonsmooth, Nonconvex Optimization. IEEE Transactions on Automatic Control, 2006, 51, 1760-1769.	5.7	119
90	A Toeplitz algorithm for polynomial J-spectral factorization. Automatica, 2006, 42, 1085-1093.	5.0	7

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91	LMIs for constrained polynomial interpolation with application in trajectory planning. Systems and Control Letters, 2006, 55, 473-477.	2.3	23
92	InÃ©galitÃ©s matricielles quadratiques et stabilitÃ© des polynÃ´mes. Journal Europeen Des Systemes Automatises, 2006, 40, 163-176.	0.4	0
93	LPV MODELING OF A TURBOFAN ENGINE. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 526-531.	0.4	52
94	Contracting Optimally an Interval Matrix without Loosing Any Positive Semi-Definite Matrix Is a Tractable Problem. Reliable Computing, 2005, 11, 1-17.	0.8	16
95	A Toeplitz Algorithm for Polynomial J-Spectral Factorization. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 363-368.	0.4	1
96	Positive polynomial matrices and improved LMI robustness conditions. Automatica, 2003, 39, 1479-1485.	5.0	60
97	GloptiPoly. ACM Transactions on Mathematical Software, 2003, 29, 165-194.	2.9	285
98	Robust Pole Placement for Second-Order Systems: An LMI Approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 419-424.	0.4	11
99	Polynomial methods and LMI optimization: New robust control functions for the polynomial toolbox 3.0. , 2003, , .		1
100	POSITIVE POLYNOMIAL MATRICES AND IMPROVED LMI ROBUSTNESS CONDITIONS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 169-174.	0.4	21
101	D-stability of polynomial matrices. International Journal of Control, 2001, 74, 845-856.	1.9	48
102	Low-order robust controller design for interval plants. International Journal of Control, 2001, 74, 1-9.	1.9	20
103	Ellipsoidal approximation of the stability domain of a polynomial. , 2001, , .		1
104	Polynomial matrices and recursive QR factorization. , 2001, , .		1
105	Polynomial Matrices, LMIs and Static Output Feedback. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 183-188.	0.4	3
106	Rank-One LMI Approach to Robust Stability of Polynomial Matrices. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 327-332.	0.4	3
107	An LMI condition for robust stability of polynomial matrix polytopes. Automatica, 2001, 37, 461-468.	5.0	45
108	Rank-one LMI Approach to Stability of 2-D Polynomial Matrices. Multidimensional Systems and Signal Processing, 2001, 12, 33-48.	2.6	8

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109	Control of linear systems subject to input constraints: a polynomial approach. Automatica, 2001, 37, 597-604.	5.0	57
110	On computing the H<inf>âˆž</inf>-norm of a polynomial matrix fraction. , 2001, , .		0
111	H 2 Optimal Control Via Pole Placement 1. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 711-716.	0.4	5
112	LMIS for Linear Systems Control by Polynomial Methods 1. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 733-738.	0.4	3
113	An LMI Condition for Robust Stability of Polynomial Matrix Polytopes 1. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 13-18.	0.4	5
114	LMIs and Polynomial Methods in Control: Illustrative Examples. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 219-224.	0.4	1
115	An algorithm for polynomial matrix factor extraction. International Journal of Control, 2000, 73, 686-695.	1.9	16
116	Rank-one LMI approach to simultaneous stabilization of linear systems. Systems and Control Letters, 1999, 38, 79-89.	2.3	38
117	LMI relaxations for robust stability of linear systems with saturating controls. Automatica, 1999, 35, 1599-1604.	5.0	55
118	Symmetric Matrix Polynomial Equation: Interpolation Results. Automatica, 1998, 34, 811-824.	5.0	12
119	Numerical Methods For Polynomial Matrix Rank Evaluation â‹†. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1998, 31, 369-374.	0.4	3
120	Detecting Global Optimality and Extracting Solutions in GloptiPoly. Lecture Notes in Control and Information Sciences, 0, , 293-310.	1.0	154
121	Exploiting Sparsity for Semi-Algebraic Set Volume Computation. Foundations of Computational Mathematics, 0, , 1.	2.5	3
122	ON OPTIMUM DESIGN OF FRAME STRUCTURES. Acta Polytechnica CTU Proceedings, 0, 26, 117-125.	0.3	2
123	Graph Recovery from Incomplete Moment Information. Constructive Approximation, 0, , 1.	3.0	1