

Vladimír Kučera

List of Publications by Year in descending order

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121
papers

2,658
citations

218381

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124
all docs

124
docs citations

124
times ranked

821
citing authors

#	ARTICLE	IF	CITATIONS
1	A contribution to matrix quadratic equations. IEEE Transactions on Automatic Control, 1972, 17, 344-347.	3.6	293
2	Diophantine equations in control – A survey. Automatica, 1993, 29, 1361-1375.	3.0	222
3	A necessary and sufficient condition for output feedback stabilizability. Automatica, 1995, 31, 1357-1359.	3.0	202
4	Positive polynomials and robust stabilization with fixed-order controllers. IEEE Transactions on Automatic Control, 2003, 48, 1178-1186.	3.6	176
5	Stabilization via static output feedback. IEEE Transactions on Automatic Control, 1993, 38, 764-765.	3.6	119
6	Efficient algorithm for matrix spectral factorization. Automatica, 1985, 21, 663-669.	3.0	107
7	Fundamental theorem of state feedback for singular systems. Automatica, 1988, 24, 653-658.	3.0	102
8	New results in state estimation and regulation. Automatica, 1981, 17, 745-748.	3.0	71
9	Parameterization of all stabilizing static state-feedback gains: Application to output-feedback design. Automatica, 2007, 43, 1597-1604.	3.0	63
10	The Matrix Equation $AX + XB = C$. SIAM Journal on Applied Mathematics, 1974, 26, 15-25.	0.8	61
11	On nonnegative definite solutions to matrix quadratic equations. Automatica, 1972, 8, 413-423.	3.0	59
12	The structure and properties of time-optimal discrete linear control. IEEE Transactions on Automatic Control, 1971, 16, 375-377.	3.6	57
13	Stochastic multivariable control: A polynomial equation approach. IEEE Transactions on Automatic Control, 1980, 25, 913-919.	3.6	57
14	Control of linear systems subject to input constraints: a polynomial approach. Automatica, 2001, 37, 597-604.	3.0	57
15	A dead-beat servo problem. International Journal of Control, 1980, 32, 107-113.	1.2	54
16	On deadbeat controllers. IEEE Transactions on Automatic Control, 1984, 29, 719-722.	3.6	53
17	Exact model matching, polynomial equation approach. International Journal of Systems Science, 1981, 12, 1477-1484.	3.7	46
18	Infinite structure and exact model matching problem: A geometric approach. IEEE Transactions on Automatic Control, 1984, 29, 266-268.	3.6	45

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19	Constant solutions of polynomial equations. <i>International Journal of Control</i> , 1991, 53, 495-502.	1.2	45
20	Model matching for linear systems with delays and 2D systems. <i>Automatica</i> , 1998, 34, 183-191.	3.0	39
21	On the assignment of invariant factors by time-varying feedback strategies. <i>Systems and Control Letters</i> , 1984, 5, 75-80.	1.3	36
22	Algebraic design of anisochronic controllers for time delay systems. <i>International Journal of Control</i> , 2003, 76, 1654-1665.	1.2	35
23	Decoupling by restricted static-state feedback: The general case. <i>IEEE Transactions on Automatic Control</i> , 1984, 29, 79-81.	3.6	33
24	Stationary LQG control of singular systems. <i>IEEE Transactions on Automatic Control</i> , 1986, 31, 31-39.	3.6	33
25	Reachability and controllability indices for linear descriptor systems. <i>Systems and Control Letters</i> , 1990, 15, 119-123.	1.3	33
26	The model matching problem for periodic discrete-time systems. <i>IEEE Transactions on Automatic Control</i> , 1997, 42, 1472-1476.	3.6	31
27	Disturbance rejection: A polynomial approach. <i>IEEE Transactions on Automatic Control</i> , 1983, 28, 508-511.	3.6	23
28	Polynomial approach to the control of SISO periodic systems subject to input constraint. <i>Automatica</i> , 2003, 39, 1417-1424.	3.0	23
29	Polynomial approach to quadratic tracking in discrete linear systems. <i>IEEE Transactions on Automatic Control</i> , 1982, 27, 1248-1250.	3.6	22
30	Generalized Output Regulation Problem for a Class of Nonlinear Systems With Nonautonomous Exosystem. <i>IEEE Transactions on Automatic Control</i> , 2004, 49, 1737-1742.	3.6	22
31	Matrix fraction construction of linear compensators. <i>IEEE Transactions on Automatic Control</i> , 1985, 30, 1112-1114.	3.6	21
32	Algebraic approach to discrete linear control. <i>IEEE Transactions on Automatic Control</i> , 1975, 20, 116-120.	3.6	16
33	Model matching of descriptor systems by proportional state feedback. <i>Automatica</i> , 1992, 28, 423-425.	3.0	16
34	Dampening controllers via a Riccati equation approach. <i>IEEE Transactions on Automatic Control</i> , 1998, 43, 1280-1284.	3.6	16
35	Optimizing simultaneously over the numerator and denominator polynomials in the Youla-Kuc/spl caron/era parametrization. <i>IEEE Transactions on Automatic Control</i> , 2005, 50, 1369-1374.	3.6	16
36	Automatica prize paper awards 1993. <i>Automatica</i> , 1994, 30, 7.	3.0	15

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37	Polynomial control: past, present, and future. International Journal of Robust and Nonlinear Control, 2007, 17, 682-705.	2.1	15
38	An efficient and versatile algorithm for computing the covariance function of an ARMA process. IEEE Transactions on Signal Processing, 1998, 46, 1591-1600.	3.2	14
39	A Method to Teach the Parameterization of All Stabilizing Controllers. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 6355-6360.	0.4	14
40	Diagonal Decoupling of Linear Systems by Static-State Feedback. IEEE Transactions on Automatic Control, 2017, 62, 6250-6265.	3.6	13
41	Polynomial solution of the standard multivariable H_2 -optimal control problem. IEEE Transactions on Automatic Control, 1994, 39, 1502-1507.	3.6	12
42	The partial model matching problem with stability. Systems and Control Letters, 1995, 24, 61-74.	1.3	12
43	Robust static output feedback controller LMI based design via elimination. Journal of the Franklin Institute, 2011, 348, 2468-2479.	1.9	12
44	Design of steady-state minimum variance controllers. Automatica, 1979, 15, 411-418.	3.0	11
45	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
46	The H_2 control problem: a general transfer-function solution. International Journal of Control, 2007, 80, 800-815.	1.2	11
47	Robust decentralized controller design based on equivalent subsystems. Automatica, 2019, 107, 29-35.	3.0	11
48	MIMO Systems Properties Preservation Under SPR Substitutions. IEEE Transactions on Circuits and Systems Part 2: Express Briefs, 2004, 51, 222-227.	2.3	10
49	A review of stable exact model matching by state feedback. , 2014, , .		9
50	The general problem of pole assignment: A polynomial equation approach. IEEE Transactions on Automatic Control, 1985, 30, 286-289.	3.6	8
51	H_∞ -Robustness properties preservation in SISO systems when applying SPR substitutions. International Journal of Control, 2003, 76, 728-740.	1.2	8
52	Expanding spectral density into correlation sequence. IEEE Transactions on Automatic Control, 1976, 21, 592-593.	3.6	7
53	Static realization of dynamic precompensators for descriptor systems. Systems and Control Letters, 1991, 16, 273-276.	1.3	7
54	FIFO stable control systems. Automatica, 1995, 31, 605-609.	3.0	7

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55	On minimum finite length control problem. International Journal of Control, 2000, 73, 152-158.	1.2	7
56	Feedback realization of nonsingular precompensators for linear systems with delays. IEEE Transactions on Automatic Control, 1997, 42, 848-852.	3.6	6
57	Control of linear systems subject to input constraints: a polynomial approach. MIMO case. , 2000, , .		6
58	Shortest correlation control strategy. IEEE Transactions on Automatic Control, 1977, 22, 463-465.	3.6	5
59	Model matching of discrete linear systems. Systems and Control Letters, 1982, 1, 321-325.	1.3	5
60	Partial model matching: Parametrization of solutions. Automatica, 1997, 33, 975-977.	3.0	5
61	H ₂ Optimal Control Via Pole Placement 1. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 711-716.	0.4	5
62	State feedback in linear control theory. Linear Algebra and Its Applications, 2000, 317, 177-192.	0.4	5
63	Characterizing families of positive real matrices by matrix substitutions on scalar rational functions. Systems and Control Letters, 2006, 55, 871-878.	1.3	5
64	Numerical analysis of diophantine equations. , 1991, , 128-136.		4
65	Output stabilizability of periodic systems: necessary and sufficient conditions. , 1998, , .		4
66	Minimum variance control: a homage to Peterka. International Journal of Adaptive Control and Signal Processing, 1999, 13, 433-449.	2.3	4
67	MEROMORPHIC STABILIZATION AND CONTROL OF TIME DELAY SYSTEMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 412-417.	0.4	4
68	Optimal control systems with prescribed eigenvalues. , 2010, , .		4
69	IAE optimization of delayed PID control loops using dimensional analysis approach. , 2014, , .		4
70	Algebraic methods in control, theory and applications. , 1996, , 54-63.		4
71	A note on the stationary LQG control. IEEE Transactions on Automatic Control, 1985, 30, 1242-1245.	3.6	3
72	External Descriptions and Staircase Forms in Implicit Systems. SIAM Journal on Matrix Analysis and Applications, 1995, 16, 289-306.	0.7	3

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73	Polynomial Matrices, LMIs and Static Output Feedback. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 183-188.	0.4	3
74	Deadbeat response is H_2 optimal. , 2008, , .		3
75	Realization of full column rank precompensators using stabilizing static state feedback. Systems and Control Letters, 2015, 76, 42-46.	1.3	3
76	Stable Model Matching by Non-Regular Static State Feedback. IEEE Transactions on Automatic Control, 2016, 61, 4138-4142.	3.6	3
77	Block Decoupling of Linear Systems by Static-State Feedback. IEEE Transactions on Automatic Control, 2019, 64, 3447-3452.	3.6	3
78	Decoupling With Stability of Linear Systems by Static-State Feedback. IEEE Transactions on Automatic Control, 2021, 66, 4684-4699.	3.6	3
79	Stability-Preserving Morse Normal Form. IEEE Transactions on Automatic Control, 2020, 65, 5099-5113.	3.6	3
80	Parametrization of Stabilizing Controllers with Applications. , 2004, , 173-192.		3
81	Testing controllability and constructibility in discrete linear systems. IEEE Transactions on Automatic Control, 1980, 25, 297-298.	3.6	2
82	Optimal control: Linear quadratic methods. Automatica, 1992, 28, 1068-1069.	3.0	2
83	Model matching for periodic systems. , 1997, , .		2
84	Model Matching with Stability for Periodic Discrete-Time Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1997, 30, 75-80.	0.4	2
85	An Evaluation of Algorithms for Computing the Covariance Function of a Multivariable Arma Process. European Journal of Control, 2002, 8, 315-325.	1.6	2
86	Optimizing simultaneously over the numerator and denominator polynomials in the Youla-Kucera parametrization. , 2004, , .		2
87	Performance and robustness preservation in MIMO systems when applying SPR Substitutions. International Journal of Systems Science, 2008, 39, 1153-1163.	3.7	2
88	Optimal and suboptimal decoupling controllers. , 2012, , .		2
89	Parameterization of all controllers that stabilize a given plant. , 2013, , .		2
90	Robust Decentralized PI Control Design. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 4699-4703.	0.4	2

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91	Model matching by non-regular static state feedback. , 2015, , .		2
92	Model Matching by Dynamic State Feedback. IFAC-PapersOnLine, 2017, 50, 3045-3050.	0.5	2
93	An Alternative Proof of the Kronecker/Morse Normal Form. , 2019, , .		2
94	Dynamical indices and order of delay-operator models. IEEE Transactions on Automatic Control, 1980, 25, 269-270.	3.6	1
95	Control system design: Conventional, algebraic and optimal methods. Automatica, 1989, 25, 322-323.	3.0	1
96	Fixed Degree Solutions of Polynomial Equations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1992, 25, 24-26.	0.4	1
97	Partial Model Matching by Static State Feedback. European Journal of Control, 1996, 2, 286-290.	1.6	1
98	Partial model matching via static feedback (the multivariable case). IEEE Transactions on Automatic Control, 1999, 44, 386-392.	3.6	1
99	Pole structure assignment via non-regular static state feedback. Automatica, 1999, 35, 1549-1555.	3.0	1
100	THE H2 CONTROL PROBLEM FOR DESCRIPTOR SYSTEMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 201-206.	0.4	1
101	Affine Parameterization of Cascade Control with Time Delays. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 3907-3912.	0.4	1
102	Affine parameterization design of cascade control for time delay plants. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 162-167.	0.4	1
103	Optimal decoupling controllers for singular systems. , 2013, , .		1
104	Achievable Structures at Infinity of Linear Systems Decoupled by Non-regular Static State Feedback. IFAC-PapersOnLine, 2017, 50, 10834-10838.	0.5	1
105	Cascade Control for Time Delay Plants. Lecture Notes in Control and Information Sciences, 2012, , 343-354.	0.6	1
106	A bridge between state-space and transfer-function methods. Annual Reviews in Control, 1999, 23, 177-184.	4.4	1
107	Assignment of infinite zero orders in linear systems using state feedback. Automatica, 2022, 135, 109954.	3.0	1
108	Cascade compensation and state feedback in singular systems. , 1987, , .		0

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109	Towards a computer aided design of linear control systems. , 1991, , 95-102.		0
110	Robust regional pole placement: An affine approximation. , 1999, , 258-270.		0
111	H ₂ Optimal Computer Control: Polynomial Toolbox. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 123-127.	0.4	0
112	The H ₂ Control Problem: State-space and Transfer-function Solutions. , 2006, , .		0
113	Polynomial Toolbox 3.0: A preview and a case study. , 2007, , .		0
114	Cascade control parameterization for time delay plants. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 123-128.	0.4	0
115	Realization of precompensators via stabilizing non-regular static state feedback. , 2013, , .		0
116	Model Matching Via Stabilizing Static State Feedback. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 4709-4714.	0.4	0
117	From Differential to Algebraic Riccati Equations: The influence of Kalman [Historical Perspectives]. IEEE Control Systems, 2017, 37, 153-156.	1.0	0
118	Rudolf E. Kalman: Life and Works. IFAC-PapersOnLine, 2017, 50, 631-636.	0.5	0
119	Assignment of Invariant and Transmission Zeros in Linear Systems. , 2018, , .		0
120	Polynomial/Algebraic Design Methods. , 2021, , 1745-1753.		0
121	FIXED DEGREE SOLUTIONS OF POLYNOMIAL EQUATIONS. , 1992, , 24-26.		0