Maria Elena Valcher

List of Publications by Year
in descending order

152 papers	3,816 citations	186265 28 h-index	138484 58 g-index
156 all docs	156 docs citations	156 times ranked	1377 citing authors

#	Article	IF	Citations
1	Observability, Reconstructibility and State Observers of Boolean Control Networks. IEEE Transactions on Automatic Control, 2013, 58, 1390-1401.	5.7	352
2	On the consensus and bipartite consensus in high-order multi-agent dynamical systems with antagonistic interactions. Systems and Control Letters, 2014, 66, 94-103.	2.3	331
3	Optimal Control of Boolean Control Networks. IEEE Transactions on Automatic Control, 2014, 59, 1258-1270.	5.7	214
4	Linear Copositive Lyapunov Functions for Continuous-Time Positive Switched Systems. IEEE Transactions on Automatic Control, 2010, 55, 1933-1937.	5.7	211
5	Stability and Stabilizability Criteria for Discrete-Time Positive Switched Systems. IEEE Transactions on Automatic Control, 2012, 57, 1208-1221.	5.7	174
6	On the periodic trajectories of Boolean control networks. Automatica, 2013, 49, 1506-1509.	5.0	142
7	Co-Positive Lyapunov Functions for the Stabilization of Positive Switched Systems. IEEE Transactions on Automatic Control, 2012, 57, 3038-3050.	5.7	132
8	Output feedback stabilization of Boolean control networks. Automatica, 2015, 57, 21-28.	5.0	127
9	State observers for discrete-time linear systems with unknown inputs. IEEE Transactions on Automatic Control, 1999, 44, 397-401.	5.7	117
10	Controllability and reachability criteria for discrete time positive systems. International Journal of Control, 1996, 65, 511-536.	1.9	116
11	Switched Positive Linear Systems. Foundations and Trends in Systems and Control, 2015, 2, 101-273.	7.5	104
12	On the internal stability and asymptotic behavior of 2-D positive systems. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 1997, 44, 602-613.	0.1	93
13	Characteristic cones and stability properties of two-dimensional autonomous behaviors. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2000, 47, 290-302.	0.1	76
14	On the Stabilizability and Consensus of Positive Homogeneous Multi-Agent Dynamical Systems. IEEE Transactions on Automatic Control, 2014, 59, 1936-1941.	5.7	75
15	Fault Detection Analysis of Boolean Control Networks. IEEE Transactions on Automatic Control, 2015, 60, 2734-2739.	5.7	69
16	nD Polynomial Matrices with Applications to Multidimensional Signal Analysis. Multidimensional Systems and Signal Processing, 1997, 8, 387-408.	2.6	67
17	On the consensus of homogeneous multi-agent systems with arbitrarily switching topology. Automatica, 2017, 84, 79-85.	5.0	58
18	Algebraic aspects of two-dimensional convolutional codes. IEEE Transactions on Information Theory, 1994, 40, 1068-1082.	2.4	54

#	ARTICLE	IF	CITATIONS
19	Directed graphs, 2D state models, and characteristic polynomials of irreducible matrix pairs. Linear Algebra and Its Applications, 1997, 263, 275-310.	0.9	54
20	Controllability and reachability of 2-D positive systems: a graph theoretic approach. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2005, 52, 576-585.	0.1	54
21	Reachability Properties of Continuous-Time Positive Systems. IEEE Transactions on Automatic Control, 2009, 54, 1586-1590.	5.7	47
22	Recent developments in Boolean networks control. Journal of Control and Decision, 2016, 3, 1-18.	1.6	47
23	A Tutorial on Positive Systems and Large Scale Control. , 2018, , .		46
24	Symbolic dynamics of Boolean control networks. Automatica, 2013, 49, 2525-2530.	5.0	45
25	Observer-based Fault Detection and Isolation for 2D State-space Models. Multidimensional Systems and Signal Processing, 2006, 17, 219-242.	2.6	39
26	Observer synthesis in the behavioral approach. IEEE Transactions on Automatic Control, 1999, 44, 2297-2307.	5.7	37
27	On the Consensus of Homogeneous Multiagent Systems With Positivity Constraints. IEEE Transactions on Automatic Control, 2017, 62, 5096-5110.	5.7	35
28	Observability and Reconstructibility of Probabilistic Boolean Networks. , 2020, 4, 319-324.		35
29	On 2D finite support convolutional codes: An algebraic approach. Multidimensional Systems and Signal Processing, 1994, 5, 231-243.	2.6	34
30	State models and asymptotic behaviour of 2D positive systems. IMA Journal of Mathematical Control and Information, 1995, 12, 17-36.	1.7	32
31	The general fault detection and isolation problem for 2D state-space models. Systems and Control Letters, 2006, 55, 894-899.	2.3	29
32	On the spectral and combinatorial structure of 2D positive systems. Linear Algebra and Its Applications, 1996, 245, 223-258.	0.9	27
33	Multidimensional Systems with Finite Support Behaviors: Signal Structure, Generation, and Detection. SIAM Journal on Control and Optimization, 1998, 36, 760-779.	2.1	27
34	On the Decomposition of Two-Dimensional Behaviors. Multidimensional Systems and Signal Processing, 2000, 11, 49-65.	2.6	25
35	Unknown input observers for 2D state-space models. International Journal of Control, 2004, 77, 861-876.	1.9	24
36	Dead beat observer synthesis. Systems and Control Letters, 1999, 37, 285-292.	2.3	23

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37	Primitivity of Positive Matrix Pairs: Algebraic Characterization, Graph Theoretic Description, and 2D Systems Interpretation. SIAM Journal on Matrix Analysis and Applications, 1998, 19, 71-88.	1.4	22
38	On the zero pattern properties and asymptotic behavior of continuous-time positive system trajectories. Linear Algebra and Its Applications, 2007, 425, 283-302.	0.9	22
39	Asymptotic stability and stabilizability of special classes of discrete-time positive switched systems. Linear Algebra and Its Applications, 2013, 438, 1814-1831.	0.9	20
40	An Algebraic Approach to the Construction of Polyhedral Invariant Cones. SIAM Journal on Matrix Analysis and Applications, 2000, 22, 453-471.	1.4	18
41	Feedback stabilization, regulation and optimal control of Boolean control networks. , 2014, , .		18
42	Input/output decoupling of Boolean control networks. IET Control Theory and Applications, 2017, 11, 2081-2088.	2.1	18
43	A Behavioral Approach to Estimation and Dead-Beat Observer Design With Applications to State–Space Models. IEEE Transactions on Automatic Control, 2006, 51, 1787-1797.	5.7	17
44	Stability and Stabilizability of Continuous-Time Linear Compartmental Switched Systems. IEEE Transactions on Automatic Control, 2016, 61, 3885-3897.	5.7	17
45	Leader-Controlled Protocols to Accelerate Convergence in Consensus Networks. IEEE Transactions on Automatic Control, 2018, 63, 3191-3205.	5.7	15
46	Reachability Properties of Single-Input Continuous-Time Positive Switched Systems. IEEE Transactions on Automatic Control, 2010, 55, 1117-1130.	5.7	14
47	New results on the solution of the positive consensus problem. , 2016, , .		14
48	A note on the direct sum decomposition of two-dimensional behaviors. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2001, 48, 490-494.	0.1	13
49	Computing the Projected Reachable Set of Stochastic Biochemical Reaction Networks Modeled by Switched Affine Systems. IEEE Transactions on Automatic Control, 2018, 63, 3719-3734.	5.7	13
50	Matrix Pairs in Two-Dimensional Systems: An Approach Based on Trace Series and Hankel Matrices. SIAM Journal on Control and Optimization, 1995, 33, 1127-1150.	2.1	12
51	Behavior decompositions and two-sided diophantine equations. Automatica, 2001, 37, 1387-1395.	5.0	12
52	Nonnegative linear systems in the behavioral approach: the autonomous case. Linear Algebra and Its Applications, 2000, 319, 147-162.	0.9	11
53	An Energy-Based Adaptive Control Design Technique for Multibody-Mechanisms With Flexible Links. IEEE/ASME Transactions on Mechatronics, 2005, 10, 571-580.	5.8	11
54	Dead-beat estimation problems for 2D behaviors. Multidimensional Systems and Signal Processing, 2008, 19, 287-306.	2.6	11

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55	Monomial reachability and zero controllability of discrete-time positive switched systems. Systems and Control Letters, 2008, 57, 340-347.	2.3	11
56	State–feedback stabilization of multi-input compartmental systems. Systems and Control Letters, 2018, 119, 81-91.	2.3	11
57	Consensus for clusters of agents with cooperative and antagonistic relationships. Automatica, 2022, 135, 110002.	5.0	11
58	On the structure of finite memory and separable two-dimensional systems. Automatica, 1994, 30, 347-350.	5.0	10
59	Two-dimensional behavior decompositions with Finite-Dimensional Intersection: A Complete Characterization. Multidimensional Systems and Signal Processing, 2005, 16, 335-354.	2.6	10
60	On the reachable set of the controlled gene expression system. , 2014, , .		10
61	Stability properties of a class of positive switched systems with rank one difference. Systems and Control Letters, 2014, 64, 12-19.	2.3	10
62	Accelerating Consensus in High-Order Leader-Follower Networks. , 2018, 2, 381-386.		10
63	Nonnegative Realization of Autonomous Systems in the Behavioral Approach. SIAM Journal on Control and Optimization, 2001, 40, 540-556.	2.1	9
64	Stabilizability of discrete-time positive switched systems. , 2010, , .		9
65	Observability and reconstructibility of Boolean control networks. , 2012, , .		9
66	Dead-Beat Control in the Behavioral Approach. IEEE Transactions on Automatic Control, 2012, 57, 2163-2175.	5.7	9
67	Scalable Control of Positive Systems. Annual Review of Control, Robotics, and Autonomous Systems, 2021, 4, 319-341.	11.8	9
68	An Algebraic Approach to the Structural Properties of Continuous Time Positive Switched Systems. , 0, , 185-192.		9
69	Optimal filtering, fault detection and isolation for linear discrete-time systems in a noisy environment. International Journal of Adaptive Control and Signal Processing, 2003, 17, 729-750.	4.1	8
70	Stability and stabilizability of special classes of discrete-time positive switched systems. , 2011, , .		8
71	Distributed Parameters Dynamic Model of a Solar Fresnel Collector Field. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 14784-14789.	0.4	8
72	On the controllability and stabilizability of non-homogeneous multi-agent dynamical systems. Systems and Control Letters, 2012, 61, 780-787.	2.3	8

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73	LINEAR-QUADRATIC CONTROL AND QUADRATIC DIFFERENTIAL FORMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 1-12.	0.4	7
74	On the reachability of continuous-time positive switched systems. , 2006, , .		7
75	Reachability properties of discrete-time positive switched systems. , 2006, , .		7
76	Reachability of a Class of Discrete-Time Positive Switched Systems. SIAM Journal on Control and Optimization, 2011, 49, 162-184.	2.1	7
77	Fault detection of Boolean control networks. , 2014, , .		7
78	Fault detection problems for Boolean networks and Boolean control networks. , 2015, , .		7
79	On the effects of communication failures in a multi-agent consensus network. , 2019, , .		7
80	A polynomial matrix approach to the structural properties of 2D positive systems. Linear Algebra and Its Applications, 2006, 413, 458-473.	0.9	6
81	On the reachability properties of continuous-time positive systems. , 2008, , .		6
82	Identification problems for Boolean networks and Boolean control networks. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 5399-5404.	0.4	6
83	On the consensus problem with positivity constraints. , 2016, , .		6
84	Reachability Analysis for Different Classes of Positive Systems. Lecture Notes in Control and Information Sciences, 2009, , 29-41.	1.0	6
85	Generalized Luenberger observers for 2D state-space models. , 2007, , .		5
86	Is stabilization of switched positive linear systems equivalent to the existence of an Hurwitz convex combination of the system matrices?. , 2011, , .		5
87	Title is missing!. Multidimensional Systems and Signal Processing, 2002, 13, 289-315.	2.6	4
88	A behavioral approach to the estimation problem and its applications to state-space models. , 0, , .		4
89	On the reachability of single-input positive switched systems. , 2008, , .		4
90	Asymptotic exponential cones of Metzler matrices and their use in the solution of an algebraic problem. Linear Algebra and Its Applications, 2010, 432, 980-1006.	0.9	4

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91	Zero-Time-Controllability and Dead-Beat Control of Two-Dimensional Behaviors. SIAM Journal on Control and Optimization, 2013, 51, 195-220.	2.1	4
92	On the stabilizability of continuous-time compartmental switched systems. , 2015, , .		4
93	Reachability analysis for switched affine systems and its application to controlled stochastic biochemical reaction networks. , 2016, , .		4
94	Polynomial inverses of 2D transfer matrices and finite memory realizations via inverse systems. Multidimensional Systems and Signal Processing, 1993, 4, 269-284.	2.6	3
95	State-space descriptions and observability properties of 2D finite-dimensional autonomous behaviors. Systems and Control Letters, 2001, 44, 91-102.	2.3	3
96	Autonomous behaviours decomposition and modal analysis. International Journal of Control, 2001, 74, 1690-1705.	1.9	3
97	On some special features which are peculiar to discrete time behaviors with trajectories on Z+. Linear Algebra and Its Applications, 2002, 351-352, 719-737.	0.9	3
98	On the stability of continuous-time positive switched systems. , 2010, , .		3
99	Peer Review [President's Message]. IEEE Control Systems, 2015, 35, 14-16.	0.8	3
100	The Value of Conferences [President's Message]. IEEE Control Systems, 2015, 35, 10-11.	0.8	3
101	The consensus problem in the behavioral approach. Systems and Control Letters, 2016, 95, 11-19.	2.3	3
102	On some connections between bilinear input/output maps and 2D systems. Nonlinear Analysis: Theory, Methods & Applications, 1997, 30, 1995-2005.	1.1	2
103	A behavioral approach to classic polynomial matrix descriptions. Systems and Control Letters, 2000, 40, 279-288.	2.3	2
104	On the stability of delay-differential systems in the behavioral framework. IEEE Transactions on Automatic Control, 2001, 46, 1634-1638.	5.7	2
105	DISTURBED FAULT DETECTION AND ISOLATION PROBLEMS FOR LINEAR STATE MODELS IN A NOISY ENVIRONMENT. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 167-172.	0.4	2
106	Recent advances on the reachability of single-input positive switched systems. , 2008, , .		2
107	On the k-switching reachability sets of single-input positive switched systems. , 2009, , .		2
108	Dead-beat control of two-dimensional behaviors. , 2012, , .		2

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109	Finite-horizon optimal control of Boolean control networks. , 2013, , .		2
110	A stabilizable switched linear system does not necessarily admit a smooth homogeneous Lyapunov function. , 2013, , .		2
111	On the use of hyperplane methods to compute the reachable set of controlled stochastic biochemical reaction networks. , 2015, , .		2
112	Consensus in the presence of communication faults. , 2019, , .		2
113	Positive Consensus Problem: The Case of Complete Communication. Lecture Notes in Control and Information Sciences, 2017, , 239-252.	1.0	2
114	Duality analysis of 2D convolutional codes. , 0, , .		1
115	Stability properties and periodic evolutions of bilinear systems in input-output form. IEEE Transactions on Automatic Control, 1999, 44, 1197-1202.	5.7	1
116	A note on the excitability properties of discrete-time positive switched systems. , 2007, , .		1
117	Reachability of a class of discrete-time positive switched systems. , 2009, , .		1
118	The consensus problem in the behavioral approach. , 2014, , .		1
119	A Generalized Tracking and Disturbance Rejection Problem for Multidimensional Behaviors. SIAM Journal on Control and Optimization, 2015, 53, 1375-1405.	2.1	1
120	Ethics in Publishing and the Reuse of Previously Published Material [President's Message]. IEEE Control Systems, 2015, 35, 12-15.	0.8	1
121	On the state-feedback stabilisation of compartmental systems. , 2017, , .		1
122	On the stability and stabilizability of a class of continuous-time positive switched systems with rank one difference. , 2013, , .		1
123	Continuous-Time Compartmental Switched Systems. Lecture Notes in Control and Information Sciences, 2017, , 123-138.	1.0	1
124	Algebraic and Graph-Theoretic Conditions for the Herdability of Linear Time-Invariant Systems. , 2021, , .		1
125	A Bandwagon Bias Based Model for Opinion Dynamics: Intertwining between Homophily and Influence Mechanisms. European Journal of Control, 2022, 68, 100675.	2.6	1
126	A state-space approach to the design of syndrome formers. Systems and Control Letters, 1996, 27, 99-107.	2.3	0

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127	On the control of finite support behaviors. Systems and Control Letters, 1997, 31, 65-75.	2.3	0
128	On the Construction of Matrix Invariants with Applications. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 783-788.	0.4	0
129	ON THE POSITIVE REALIZATION OF CONTROLLABLE BEHAVIORS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2002, 35, 47-52.	0.4	0
130	Optimality with Respect to Blips. , 0, , .		0
131	Driving variable realizations and the non-negative realization problem for controllable behaviours. International Journal of Control, 2005, 78, 720-733.	1.9	0
132	A Polynomial Matrix Approach to the Structural Properties of 2D Positive Systems. , 0, , .		0
133	Linear systems theory—a structural decomposition approach by B.M. Chen, Z. Lin and Y. Shamash. Copyright Birkhäuser, Boston, 2004, ISBN: 0-8176-3779-6.. Automatica, 2006, 42, 885-886.	5.0	0
134	Strong excitability of discrete-time positive switched systems. , 2007, , .		0
135	Member Initiatives for 2006 and 2007 [Member Activities]. IEEE Control Systems, 2007, 27, 16-38.	0.8	0
136	Zero patterns and dominant modes of the state evolutions of autonomous continuous-time positive systems. , 2007, , .		0
137	Preliminary results on the controllability and stabilizability of non-homogeneous multi-agent dynamical systems. , 2011, , .		0
138	Zero-controllability and dead-beat control of discrete-time behaviors. , 2012, , .		0
139	Partial interconnection dead-beat control of two-dimensional behaviors. , 2013, , .		0
140	A Call for Volunteers [Member Activities]. IEEE Control Systems, 2014, 34, 19-21.	0.8	0
141	Welcome addresses. , 2015, , .		0
142	The Impact of Control: Do We Have an Impact? [President's Message]. IEEE Control Systems, 2015, 35, 10-60.	0.8	0
143	The Joy of Research [President's Message]. IEEE Control Systems, 2015, 35, 12-13.	0.8	0
144	Discovering China [President's Message]. IEEE Control Systems, 2015, 35, 11-15.	0.8	0

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145	Partial interconnection and observer-based dead-beat control of two-dimensional behaviors. Multidimensional Systems and Signal Processing, 2015, 26, 459-479.	2.6	0
146	A strategy to accelerate consensus in leader-follower networks. , 2018, , .		0
147	On the Common Linear Copositive Lyapunov Functions for Compartmental Switched Systems. Lecture Notes in Control and Information Sciences, 2019, , 27-36.	1.0	0
148	Tripartite and Sign Consensus for Clustering Balanced Social Networks. , 2021, , .		0
149	Properties of finite-dimensional sets of solutions of 2D difference equations. , 2001, , .		0
150	k-Switching Reachability Sets of Continuous-Time Positive Switched Systems. Lecture Notes in Control and Information Sciences, 2009, , 173-181.	1.0	0
151	Matrix Pairs and 2D Systems Analysis. European Consortium for Mathematics in Industry, 1997, , 56-69.	0.4	0
152	Feedback context-aware pervasive systems in healthcare management: a Boolean Network approach. , 2022, , 237-260.		0