

Alexander Lanzon

List of Publications by Year in descending order

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158
papers

3,648
citations

117571

34
h-index

155592

55
g-index

158
all docs

158
docs citations

158
times ranked

1169
citing authors

#	ARTICLE	IF	CITATIONS
1	Stability Robustness of a Feedback Interconnection of Systems With Negative Imaginary Frequency Response. IEEE Transactions on Automatic Control, 2008, 53, 1042-1046.	3.6	284
2	Feedback Control of Negative-Imaginary Systems. IEEE Control Systems, 2010, 30, 54-72.	1.0	257
3	A Negative Imaginary Lemma and the Stability of Interconnections of Linear Negative Imaginary Systems. IEEE Transactions on Automatic Control, 2010, 55, 2342-2347.	3.6	158
4	Cooperative Control of Heterogeneous Connected Vehicle Platoons: An Adaptive Leader-Following Approach. IEEE Robotics and Automation Letters, 2020, 5, 977-984.	3.3	124
5	Generalizing Negative Imaginary Systems Theory to Include Free Body Dynamics: Control of Highly Resonant Structures With Free Body Motion. IEEE Transactions on Automatic Control, 2014, 59, 2692-2707.	3.6	123
6	Flight Control of a Quadrotor Vehicle Subsequent to a Rotor Failure. Journal of Guidance, Control, and Dynamics, 2014, 37, 580-591.	1.6	122
7	Distributed Adaptive Time-Varying Group Formation Tracking for Multiagent Systems With Multiple Leaders on Directed Graphs. IEEE Transactions on Control of Network Systems, 2020, 7, 140-150.	2.4	108
8	A Feedback Linearization Approach to Fault Tolerance in Quadrotor Vehicles. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 5413-5418.	0.4	101
9	Stability Analysis of Interconnected Systems With "Mixed" Negative-Imaginary and Small-Gain Properties. IEEE Transactions on Automatic Control, 2011, 56, 1395-1400.	3.6	80
10	A negative-imaginary lemma without minimality assumptions and robust state-feedback synthesis for uncertain negative-imaginary systems. Systems and Control Letters, 2012, 61, 1269-1276.	1.3	75
11	Robust Output Feedback Consensus for Networked Negative-Imaginary Systems. IEEE Transactions on Automatic Control, 2015, 60, 2547-2552.	3.6	71
12	Computing the Positive Stabilizing Solution to Algebraic Riccati Equations With an Indefinite Quadratic Term via a Recursive Method. IEEE Transactions on Automatic Control, 2008, 53, 2280-2291.	3.6	67
13	Kinematic Analysis and Control Design for a Nonplanar Multirotor Vehicle. Journal of Guidance, Control, and Dynamics, 2011, 34, 1157-1171.	1.6	65
14	Foundations of Not Necessarily Rational Negative Imaginary Systems Theory: Relations Between Classes of Negative Imaginary and Positive Real Systems. IEEE Transactions on Automatic Control, 2016, 61, 3052-3057.	3.6	64
15	Feedback Stability of Negative Imaginary Systems. IEEE Transactions on Automatic Control, 2017, 62, 5620-5633.	3.6	64
16	Weight optimisation in H _∞ loop-shaping. Automatica, 2005, 41, 1201-1208.	3.0	63
17	Spectral Conditions for Negative Imaginary Systems With Applications to Nanopositioning. IEEE/ASME Transactions on Mechatronics, 2014, 19, 895-903.	3.7	63
18	Distributed Finite-Time Consensus Control for Heterogeneous Battery Energy Storage Systems in Droop-Controlled Microgrids. IEEE Transactions on Smart Grid, 2019, 10, 4751-4761.	6.2	59

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19	Robust cooperative control of multiple heterogeneous Negative-Imaginary systems. Automatica, 2015, 61, 64-72.	3.0	56
20	A mixed-small gain and passivity theorem in the frequency domain. Systems and Control Letters, 2007, 56, 596-602.	1.3	53
21	An innovative tri-rotor drone and associated distributed aerial drone swarm control. Robotics and Autonomous Systems, 2018, 103, 162-174.	3.0	51
22	A Decentralized Cluster Formation Containment Framework for Multirobot Systems. IEEE Transactions on Robotics, 2021, 37, 1936-1955.	7.3	47
23	Towards Controller Synthesis for Systems with Negative Imaginary Frequency Response. IEEE Transactions on Automatic Control, 2010, 55, 1506-1511.	3.6	45
24	Discrete-time negative imaginary systems. Automatica, 2017, 79, 1-10.	3.0	45
25	Unfalsified adaptive control: A new controller implementation and some remarks. , 2007, , .		44
26	A generalized negative imaginary lemma and Riccati-based static state-feedback negative imaginary synthesis. Systems and Control Letters, 2015, 77, 63-68.	1.3	44
27	Robust performance analysis for uncertain negative-imaginary systems. International Journal of Robust and Nonlinear Control, 2012, 22, 262-281.	2.1	43
28	On lossless negative imaginary systems. Automatica, 2012, 48, 1213-1217.	3.0	41
29	Equivalence between classes of multipliers for slope-restricted nonlinearities. Automatica, 2013, 49, 1732-1740.	3.0	40
30	Group Coordinated Control of Networked Mobile Robots With Applications to Object Transportation. IEEE Transactions on Vehicular Technology, 2021, 70, 8269-8274.	3.9	39
31	A combined application of H_∞ loop shaping and μ -synthesis to control high-speed flywheels. IEEE Transactions on Control Systems Technology, 2005, 13, 766-777.	3.2	38
32	Validating Controllers for Internal Stability Utilizing Closed-Loop Data. IEEE Transactions on Automatic Control, 2009, 54, 2719-2725.	3.6	38
33	A strongly strict negative-imaginary lemma for non-minimal linear systems. Communications in Information and Systems, 2011, 11, 139-142.	0.3	38
34	Interconnections of nonlinear systems with mixed-small gain and passivity properties and associated input-output stability results. Systems and Control Letters, 2009, 58, 289-295.	1.3	35
35	Comments on "On the Existence of Stable, Causal Multipliers for Systems With Slope-Restricted Nonlinearities". IEEE Transactions on Automatic Control, 2012, 57, 2422-2428.	3.6	34
36	$\frac{1}{s^2 + 1}$ <small>xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/common/struct-bib/dtd" xmlns:ce="http://www.elsevier.com/x</small>	3.0	31

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37	Finite Frequency Negative Imaginary Systems. IEEE Transactions on Automatic Control, 2012, 57, 2917-2922.	3.6	31
38	LMI searches for anticausal and noncausal rational Zamesâ€™Falb multipliers. Systems and Control Letters, 2014, 70, 17-22.	1.3	31
39	Design and control of novel tri-rotor UAV. , 2012, , .		29
40	Distance Measures for Uncertain Linear Systems: A General Theory. IEEE Transactions on Automatic Control, 2009, 54, 1532-1547.	3.6	28
41	Checking if controllers are stabilizing using closed-loop data. , 2006, , .		27
42	Stability analysis of negative imaginary systems with real parametric uncertainty â€” the single-input single-output case. IET Control Theory and Applications, 2010, 4, 2631-2638.	1.2	27
43	Enhanced Tracking for Nanopositioning Systems Using Feedforward/Feedback Multivariable Control Design. IEEE Transactions on Control Systems Technology, 2015, 23, 1003-1013.	3.2	26
44	A modified positive-real type stability condition. , 2007, , .		25
45	Output strictly negative imaginary systems and its connections to dissipativity theory. , 2019, , .		25
46	An ?? algorithm for the windsurfer approach to adaptive robust control. International Journal of Adaptive Control and Signal Processing, 2004, 18, 607-628.	2.3	22
47	A model reference approach to safe controller changes in iterative identification and control. Automatica, 2006, 42, 193-203.	3.0	22
48	Two-layer distributed formation containment control strategy for linear swarm systems: Algorithm and experiments. International Journal of Robust and Nonlinear Control, 2020, 30, 6433-6453.	2.1	22
49	Design of Robust Drag-Free Controllers with Given Structure. Journal of Guidance, Control, and Dynamics, 2009, 32, 1609-1621.	1.6	20
50	Model approximation using magnitude and phase criteria: implications for model reduction and system identification. International Journal of Robust and Nonlinear Control, 2007, 17, 435-461.	2.1	19
51	On the formulation and solution of robust performance problems. Automatica, 2003, 39, 1707-1720.	3.0	18
52	A two-degree-of-freedom, â€” control design method for robust model matching. International Journal of Robust and Nonlinear Control, 2006, 16, 467-483.	2.1	17
53	A new stability result for the feedback interconnection of negative imaginary systems with a pole at the origin. , 2011, , .		17
54	Enforcing negative imaginary dynamics on mathematical system models. International Journal of Control, 2013, 86, 1292-1303.	1.2	17

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55	Robust Cooperative Control of Networked Train Platoons: A Negative-Imaginary Systems™ Perspective. IEEE Transactions on Control of Network Systems, 2021, 8, 1743-1753.	2.4	17
56	Applying negative imaginary systems theory to non-square systems with polytopic uncertainty. Automatica, 2021, 128, 109570.	3.0	17
57	An approach for computing the exact stability domain for a class of LTI parameter dependent systems. International Journal of Control, 2006, 79, 1046-1061.	1.2	16
58	Stability analysis of positive feedback interconnections of linear negative imaginary systems. , 2009, , .		16
59	Factorization of multipliers in passivity and IQC analysis. Automatica, 2012, 48, 909-916.	3.0	16
60	A combined iterative scheme for identification and control redesigns. International Journal of Adaptive Control and Signal Processing, 2004, 18, 629-644.	2.3	15
61	Pointwise in frequency performance weight optimization in $\hat{\mu}$ -synthesis. International Journal of Robust and Nonlinear Control, 2005, 15, 171-199.	2.1	14
62	On multipliers for bounded and monotone nonlinearities. Systems and Control Letters, 2014, 66, 65-71.	1.3	13
63	Negative Imaginary Theory for a Class of Linear Time-Varying Systems. , 2021, 5, 1001-1006.		13
64	Simultaneous synthesis of weights and controllers in $\hat{\mu}$ /loop-shaping. , 0, , .		13
65	An iterative algorithm to solve Algebraic Riccati Equations with an indefinite quadratic term. , 2007, , .		12
66	Smooth weight optimization in loop-shaping design. Systems and Control Letters, 2010, 59, 663-670.	1.3	12
67	Cooperative Control of Integrator Negative Imaginary Systems with Application to Rendezvous Multiple Mobile Robots. , 2019, , .		12
68	Negative imaginary synthesis via dynamic output feedback and static state feedback: A Riccati approach. Automatica, 2019, 104, 220-227.	3.0	12
69	Time-domain output negative imaginary systems and its connection to dynamic dissipativity. , 2020, , .		12
70	Verifying stabilizing controllers via closed-loop noisy data: MIMO case. , 2007, , .		11
71	A Robust Kalman Conjecture For First-Order Plants. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 27-32.	0.4	10
72	LMI search for rational anticausal Zames-Falb multipliers. , 2012, , .		10

#	ARTICLE	IF	CITATIONS
73	Closed-loop stability analysis of discrete-time negative imaginary systems. Systems and Control Letters, 2018, 114, 52-58.	1.3	10
74	Selection of a single uniquely specifiable \hat{H}^∞ controller in the chain-scattering framework. Automatica, 2004, 40, 985-994.	3.0	8
75	A "Mixed"-small gain and passivity theorem for an interconnection of linear time-invariant systems. , 2007, , .		8
76	Stabilization of uncertain negative-imaginary systems using a Riccati equation approach. , 2012, , .		8
77	Robust stability and performance analysis for uncertain linear systemsâ€”The distance measure approach. International Journal of Robust and Nonlinear Control, 2012, 22, 1270-1292.	2.1	8
78	Negative Imaginary Lemmas for Descriptor Systems. IEEE Transactions on Automatic Control, 2015, , 1-1.	3.6	8
79	Cooperative Adaptive Time-Varying Formation Tracking for Multi-Agent Systems with LQR Performance Index and Switching Directed Topologies. , 2018, , .		8
80	A frequency domain optimisation algorithm for simultaneous design of performance weights and controllers in \mathcal{H}^∞ -synthesis. , 0, , .		7
81	State-space solution to weight optimization problem in \mathcal{H}^∞ -loop-shaping control. Automatica. 2012, 48, 505-513.	3.0	7
82	Robust output consensus of homogeneous multi-agent systems with negative imaginary dynamics. Automatica, 2020, 113, 108799.	3.0	7
83	A state-space algorithm for the simultaneous optimisation of performance weights and controllers in \mathcal{H}^∞ -synthesis. , 0, , .		6
84	Reformulating negative imaginary frequency response systems to bounded-real systems. , 2008, , .		6
85	Spectral Conditions for the Negative Imaginary Property of Transfer Function Matrices. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 1302-1306.	0.4	6
86	Effect of unmodelled actuator dynamics on feedback linearised systems and a two stage feedback linearisation method. , 2013, , .		6
87	Foundations of a Bicoprime Factorization Theory. IEEE Transactions on Automatic Control, 2017, 62, 4598-4603.	3.6	6
88	Distributed robust stabilization of networked multiagent systems with strict negative imaginary uncertainties. International Journal of Robust and Nonlinear Control, 2019, 29, 4845-4858.	2.1	6
89	Dynamic Output Feedback Controller Synthesis using an LMI-based \hat{H}^∞ - Strictly Negative Imaginary Framework. , 2019, , .		6
90	A stability result for interconnections of nonlinear systems with mixed; small gain and passivity properties. , 2007, , .		5

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91	Design of robust decentralized controllers for drag-free satellite. , 2008, , .		5
92	Designing simple indoor navigation system for UAVs. , 2011, , .		5
93	Cooperative Control of Innovative Tri-Rotor Drones Using Robust Feedback Linearization. , 2018, , .		5
94	Iterative Identification and Control Using Non-normalized Coprime Factors With Application in Wafer Stage Motion Control. IEEE Transactions on Control Systems Technology, 2020, 28, 413-424.	3.2	5
95	On weight adjustments in H _∞ control design. , 2003, , .		5
96	¼ analysis for interconnections of systems with negative imaginary frequency response. , 2009, , .		5
97	Compliant motion control for non-redundant rigid robotic manipulators. International Journal of Control, 2000, 73, 225-241.	1.2	4
98	Safe adaptive controller changes based on reference model adjustments. , 0, , .		4
99	Distance Measures, Robust Stability Conditions and Robust Performance Guarantees for Uncertain Feedback Systems. , 0, , 317-344.		4
100	Analysis of robust performance for uncertain negative-imaginary systems using structured singular value. , 2010, , .		4
101	Factorization of multipliers in passivity and IQC analysis. , 2011, , .		4
102	A closed-loop data based test for robust performance improvement in iterative identification and control redesigns. Automatica, 2012, 48, 2710-2716.	3.0	4
103	Characterising discrete-time linear systems with the “mixed”-positive real and bounded real property. European Journal of Control, 2014, 20, 259-268.	1.6	4
104	Bicoprime Factor Stability Criteria and Uncertainty Characterisation—This work was financially supported by the UK Engineering and Physical Sciences Research Council (EPSRC) through a Doctoral Training Award (DTA). IFAC-PapersOnLine, 2015, 48, 229-234.	0.5	4
105	Conditions for preserving negative imaginary properties in feedback interconnections and an application to multi-agent systems. , 2017, , .		4
106	On negative imaginary synthesis via solutions to Riccati equations. , 2018, , .		4
107	A Direct Proof of the Equivalence of Side Conditions for Strictly Positive Real Matrix Transfer Functions. IEEE Transactions on Automatic Control, 2020, 65, 450-452.	3.6	4
108	Strictly negative imaginary state feedback control with a prescribed degree of stability. Automatica, 2020, 119, 109079.	3.0	4

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109	On Discrete-Time Output Negative Imaginary Systems. , 2022, 6, 1124-1129.		4
110	Relationship between poles and zeros of input-output and chain-scattering systems. Systems and Control Letters, 2006, 55, 314-320.	1.3	3
111	Quantitative effects of weight adjustments in \mathcal{H}_∞ control. Optimal Control Applications and Methods, 2009, 30, 267-286.	1.3	3
112	Robustness analysis and controller synthesis with non-normalized coprime factor uncertainty characterisation. , 2011, , .		3
113	Enforcing a system model to be negative imaginary via perturbation of Hamiltonian matrices. , 2011, , .		3
114	An iterative algorithm for maximizing robust performance in loop-shaping design. International Journal of Robust and Nonlinear Control, 2013, 23, 919-931.	2.1	3
115	A Robust Output Feedback Consensus Protocol for Networked Negative-Imaginary Systems. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 2878-2883.	0.4	3
116	Controller Synthesis to Render a Closed Loop Transfer Function Strongly Strictly Negative Imaginary. , 2018, , .		3
117	Robust Output Consensus for Networks of Homogeneous Negative Imaginary Systems. , 2018, , .		3
118	Normalized Bicoprime Factorizations. , 2018, , .		3
119	Trajectory/force control for robotic manipulators using sliding-mode and adaptive control. , 1999, , .		2
120	An algorithm for joint identification and control. , 2002, , .		2
121	Safe controller changes with additional guaranteed model reference performance improvement for the unknown plant. , 2004, , .		2
122	ON POLES AND ZEROS OF INPUT-OUTPUT AND CHAIN-SCATTERING SYSTEMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2005, 38, 348-353.	0.4	2
123	An H_∞ model referencing design utilizing a two degree of freedom controller scheme. , 0, , .		2
124	Systematic Design of Optimal Performance Weight and Controller in Mixed- \mathcal{H}_μ Synthesis. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 7814-7819.	0.4	2
125	Distance measures for linear systems with multiplicative and inverse multiplicative uncertainty characterisation. , 2010, , .		2
126	Weight optimization for maximizing robust performance in \mathcal{H}_∞ loop-shaping design. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 10135-10140.	0.4	2

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127	H-infinity-PID controller for an open-loop unstable system. , 2017, , .		2
128	Formation-containment tracking and scaling for multiple quadcopters with an application to choke-point navigation. , 2022, , .		2
129	A Stability Robustness Test for Systems with Linear Time-varying Uncertainties. , 0, , .		1
130	Synthesis of parameter-dependent controllers yielding affine-in-parameters characteristic polynomials. , 2006, , .		1
131	On the modelling of a bistable genetic switch. , 2006, , .		1
132	Directions, applications and methods in robust control. Optimal Control Applications and Methods, 2009, 30, 223-224.	1.3	1
133	A test for stability robustness of linear time-varying systems utilizing the linear time-invariant $\hat{\gamma}_{\infty}$ metric. International Journal of Robust and Nonlinear Control, 2009, 19, 986-1015.	2.1	1
134	Finite frequency negative imaginary systems. , 2010, , .		1
135	Incorporating smoothness into weight optimization for ∞ loop-shaping design. , 2010, , .		1
136	Designing Electric Propulsion Systems for UAVs. Lecture Notes in Computer Science, 2011, , 388-389.	1.0	1
137	A parameterization of parahermitian matrix functions and its application to a state-space solution for -analysis. Systems and Control Letters, 2011, 60, 798-806.	1.3	1
138	On state-space characterization for strict negative-imaginariness of LTI systems. , 2011, , .		1
139	Revisiting robust stabilization of coprime factors: The general case. , 2012, , .		1
140	Discussion on: "2-DOF Controller Design for Precise Positioning a Spindle Levitated with Active Magnetic Bearings". European Journal of Control, 2012, 18, 207-209.	1.6	1
141	Equivalence between classes of multipliers for slope-restricted nonlinearities. , 2012, , .		1
142	On multipliers for bounded and monotone nonlinearities. , 2013, , .		1
143	Design, control, and performance of the "weed"™ 6 wheel robot in the UK MOD grand challenge. Advanced Robotics, 2014, 28, 203-218.	1.1	1
144	Descriptor systems state-space conditions to guarantee negative imaginary properties without minimality restrictions. , 2015, , .		1

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145	Robust output feedback consensus for multiple heterogeneous negative-imaginary systems. , 2015, , .		1
146	Robust Stabilization of Networked Multi-agent Systems with Strict Negative Imaginary Uncertainties: An LMI Approach*. , 2018, , .		1
147	LMI-Based Gain Scheduled Controller Synthesis for a Class of Linear Parameter Varying Systems. , 0, , 1-23.		1
148	A Newton-Raphson algorithm for calculating the effects of changes in weights on an H ∞ design. , 0, , .		0
149	Special Issue on Directions, Applications and Methods in Robust Control Optimal Control, Applications and Methods (OCAM). Optimal Control Applications and Methods, 2007, 28, n/a-n/a.	1.3	0
150	Robust Performance Improvement Test for Stabilizing Controllers Using Closed-Loop Data. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 3623-3628.	0.4	0
151	Simultaneous optimization of performance weights and a controller in mixed-norm H_2/H_∞ control. $\min_{K} \left\ \begin{bmatrix} G_1 \\ G_2 \end{bmatrix} \right\ _{\infty} \quad \text{subject to} \quad \left\ \begin{bmatrix} G_1 \\ G_2 \end{bmatrix} \right\ _2 \leq \gamma$	3.0	0
152	A subspace system identification algorithm guaranteeing the negative imaginary property. , 2014, , .		0
153	Feedforward/feedback multivariable control design for high speed nanopositioning. , 2014, , .		0
154	Robust Formation Control of Train Platoons for Interval Maintaining. , 2020, , .		0
155	Controller synthesis to achieve robust stability against bicoprime factor uncertainty: an LMI approach. IFAC-PapersOnLine, 2020, 53, 7400-7405.	0.5	0
156	Development and stabilization of a low-cost single-tilt tricopter. IFAC-PapersOnLine, 2020, 53, 8897-8902.	0.5	0
157	Sensor blending and Control allocation for non-square linear systems to achieve negative imaginary dynamics. IFAC-PapersOnLine, 2020, 53, 4629-4634.	0.5	0
158	On Local Input-Output Stability of Nonlinear Feedback Systems via Local Graph Separation. , 2022, , 1-1.		0