

Matthew R James

List of Publications by Year in descending order

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166
papers

5,336
citations

109311

35
h-index

98792

67
g-index

167
all docs

167
docs citations

167
times ranked

1556
citing authors

#	ARTICLE	IF	CITATIONS
1	H^∞ Control of Linear Quantum Stochastic Systems. IEEE Transactions on Automatic Control, 2008, 53, 1787-1803.	5.7	394
2	An Introduction to Quantum Filtering. SIAM Journal on Control and Optimization, 2007, 46, 2199-2241.	2.1	364
3	The Series Product and Its Application to Quantum Feedforward and Feedback Networks. IEEE Transactions on Automatic Control, 2009, 54, 2530-2544.	5.7	349
4	Coherent quantum LQG control. Automatica, 2009, 45, 1837-1846.	5.0	248
5	Minimax optimal control of stochastic uncertain systems with relative entropy constraints. IEEE Transactions on Automatic Control, 2000, 45, 398-412.	5.7	239
6	Risk-sensitive control and dynamic games for partially observed discrete-time nonlinear systems. IEEE Transactions on Automatic Control, 1994, 39, 780-792.	5.7	228
7	Quantum Feedback Networks: Hamiltonian Formulation. Communications in Mathematical Physics, 2009, 287, 1109-1132.	2.2	145
8	Squeezing components in linear quantum feedback networks. Physical Review A, 2010, 81, .	2.5	134
9	Asymptotic analysis of nonlinear stochastic risk-sensitive control and differential games. Mathematics of Control, Signals, and Systems, 1992, 5, 401-417.	2.3	124
10	Network Synthesis of Linear Dynamical Quantum Stochastic Systems. SIAM Journal on Control and Optimization, 2009, 48, 2686-2718.	2.1	124
11	Dynamic Observers as Asymptotic Limits of Recursive Filters: Special Cases. SIAM Journal on Applied Mathematics, 1988, 48, 1147-1158.	1.8	117
12	Direct and Indirect Couplings in Coherent Feedback Control of Linear Quantum Systems. IEEE Transactions on Automatic Control, 2011, 56, 1535-1550.	5.7	111
13	Robustness and risk-sensitive filtering. IEEE Transactions on Automatic Control, 2002, 47, 451-461.	5.7	110
14	Quantum Dissipative Systems and Feedback Control Design by Interconnection. IEEE Transactions on Automatic Control, 2010, 55, 1806-1821.	5.7	100
15	A partial differential inequality for dissipative nonlinear systems. Systems and Control Letters, 1993, 21, 315-320.	2.3	99
16	Robust H_2 output feedback control for nonlinear systems. IEEE Transactions on Automatic Control, 1995, 40, 1007-1017.	5.7	99
17	Risk-sensitive optimal control of quantum systems. Physical Review A, 2004, 69, .	2.5	90
18	Quantum filtering for systems driven by fields in single-photon states or superposition of coherent states. Physical Review A, 2012, 86, .	2.5	90

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19	Partially Observed Differential Games, Infinite-Dimensional Hamiltonianâ€“Jacobiâ€“Isaacs Equations, and Nonlinear H_∞ Control. SIAM Journal on Control and Optimization, 1996, 34, 1342-1364.	2.1	86
20	Conditions for stability of the extended Kalman filter and their application to the frequency tracking problem. Mathematics of Control, Signals, and Systems, 1995, 8, 1-26.	2.3	82
21	A Discrete Invitation to Quantum Filtering and Feedback Control. SIAM Review, 2009, 51, 239-316.	8.4	78
22	Avoiding entanglement sudden death via measurement feedback control in a quantum network. Physical Review A, 2008, 78, .	2.5	67
23	Quantum feedback networks and control: A brief survey. Science Bulletin, 2012, 57, 2200-2214.	1.7	67
24	Stability, gain, and robustness in quantum feedback networks. Physical Review A, 2006, 73, .	2.5	63
25	Robust Properties of Risk-Sensitive Control. Mathematics of Control, Signals, and Systems, 2000, 13, 318-332.	2.3	57
26	Nonlinear state estimation for uncertain systems with an integral constraint. IEEE Transactions on Signal Processing, 1998, 46, 2926-2937.	5.3	54
27	Robust and accurate time-optimal path-tracking control for robot manipulators. IEEE Transactions on Automation Science and Engineering, 1997, 13, 880-890.	2.3	53
28	Time discretization of continuous-time filters and smoothers for HMM parameter estimation. IEEE Transactions on Information Theory, 1996, 42, 593-605.	2.4	51
29	On the Response of Quantum Linear Systems to Single Photon Input Fields. IEEE Transactions on Automatic Control, 2013, 58, 1221-1235.	5.7	47
30	Asymptotic Series and Exit Time Probabilities. Annals of Probability, 1992, 20, 1369.	1.8	45
31	The Hamiltonianâ€“Jacobiâ€“Bellman Equation for Time-Optimal Control. SIAM Journal on Control and Optimization, 1989, 27, 1477-1489.	2.1	44
32	Robust stability of uncertain linear quantum systems. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 5354-5363.	3.4	43
33	Analysis of input-to-state stability for discrete time nonlinear systems via dynamic programming. Automatica, 2005, 41, 2055-2065.	5.0	39
34	On the Composition of the Top Layer of Microphase Separated Thin PS-PEO Films. Macromolecules, 2009, 42, 4801-4808.	4.8	39
35	Output feedback risk-sensitive control and differential games for continuous-time nonlinear systems. , 0, , .		36
36	The risk-sensitive index and the H_2 and H_∞ norms for nonlinear systems. Mathematics of Control, Signals, and Systems, 1995, 8, 199-221.	2.3	36

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37	A quantum Langevin formulation of risk-sensitive optimal control. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005, 7, S198-S207.	1.4	36
38	Quantum filtering for systems driven by fields in single photon states and superposition of coherent states using non-Markovian embeddings. <i>Quantum Information Processing</i> , 2013, 12, 1469-1499.	2.2	36
39	Frequency locking of an optical cavity using linear quadratic Gaussian integral control. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2009, 42, 175501.	1.5	35
40	Performance analysis and controller synthesis for nonlinear systems with stochastic uncertainty constraints. <i>Automatica</i> , 1996, 32, 959-972.	5.0	33
41	Zero-dynamics principle for perfect quantum memory in linear networks. <i>New Journal of Physics</i> , 2014, 16, 073032.	2.9	33
42	Numerical approximation of the H^∞ norm for nonlinear systems. <i>Automatica</i> , 1995, 31, 1075-1086.	5.0	32
43	Dissipativity and nonlinear systems with finite power gain. <i>International Journal of Robust and Nonlinear Control</i> , 1998, 8, 699-724.	3.7	30
44	Heisenberg picture approach to the stability of quantum Markov systems. <i>Journal of Mathematical Physics</i> , 2014, 55, 062701.	1.1	30
45	Gap Metrics, Representations, and Nonlinear Robust Stability. <i>SIAM Journal on Control and Optimization</i> , 2005, 43, 1535-1582.	2.1	27
46	Quantum observer for linear quantum stochastic systems. , 2012, , .		27
47	Analysis of the operation of gradient echo memories using a quantum input-output model. <i>New Journal of Physics</i> , 2013, 15, 085020.	2.9	25
48	A unified approach to controller design for achieving ISS and related properties. <i>IEEE Transactions on Automatic Control</i> , 2005, 50, 1681-1697.	5.7	24
49	L^∞ -bounded robustness for nonlinear systems: analysis and synthesis. <i>IEEE Transactions on Automatic Control</i> , 2003, 48, 1875-1891.	5.7	23
50	Quantum trajectories for a class of continuous matrix product input states. <i>New Journal of Physics</i> , 2014, 16, 075008.	2.9	22
51	NONLINEAR DISCRETE-TIME RISK-SENSITIVE OPTIMAL CONTROL. <i>International Journal of Robust and Nonlinear Control</i> , 1996, 6, 1-19.	3.7	21
52	Quantum feedback control of linear stochastic systems with feedback-loop time delays. <i>Automatica</i> , 2015, 52, 277-282.	5.0	20
53	Optimal Control of Hybrid Systems and a System of Quasi-Variational Inequalities. <i>SIAM Journal on Control and Optimization</i> , 2006, 45, 722-761.	2.1	19
54	Quantum optical realization of classical linear stochastic systems. <i>Automatica</i> , 2013, 49, 3090-3096.	5.0	19

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55	Analysis and control of quantum finite-level systems driven by single-photon input states. <i>Automatica</i> , 2016, 69, 18-23.	5.0	19
56	Robust Stabilization of Nonlinear Systems via Normalized Coprime Factor Representations. <i>Automatica</i> , 1998, 34, 1593-1599.	5.0	18
57	Single photon quantum filtering using non-Markovian embeddings. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012, 370, 5408-5421.	3.4	18
58	Rates of Convergence for Approximation Schemes in Optimal Control. <i>SIAM Journal on Control and Optimization</i> , 1998, 36, 719-741.	2.1	17
59	Quantum Risk-Sensitive Control. , 2006, , .		17
60	Effects of measurement backaction in the stabilization of a Bose-Einstein condensate through feedback. <i>Physical Review A</i> , 2007, 76, .	2.5	17
61	Reduced-complexity numerical method for optimal gate synthesis. <i>Physical Review A</i> , 2010, 82, .	2.5	17
62	Comparing resolved-sideband cooling and measurement-based feedback cooling on an equal footing: Analytical results in the regime of ground-state cooling. <i>Physical Review A</i> , 2015, 91, .	2.5	17
63	Dissipative control systems synthesis with full state feedback. <i>Mathematics of Control, Signals, and Systems</i> , 1998, 11, 335-356.	2.3	16
64	A Popov stability condition for uncertain linear quantum systems. , 2013, , .		16
65	Coherent observers for linear quantum stochastic systems. <i>Automatica</i> , 2016, 71, 264-271.	5.0	16
66	Finite Time Observer Design by Probabilistic-Variational Methods. <i>SIAM Journal on Control and Optimization</i> , 1991, 29, 954-967.	2.1	15
67	A nonlinear partially observed differential game with a finite-dimensional information state. <i>Systems and Control Letters</i> , 1995, 26, 137-145.	2.3	15
68	Homodyne locking of a squeezer. <i>Optics Letters</i> , 2009, 34, 2465.	3.3	15
69	Cavity driven by a single photon: Conditional dynamics and nonlinear phase shift. <i>Physical Review A</i> , 2012, 86, .	2.5	15
70	Gate complexity using dynamic programming. <i>Physical Review A</i> , 2008, 78, .	2.5	13
71	Synthesis and structure of mixed quantum-classical linear systems. , 2012, , .		13
72	Coherently tracking the covariance matrix of an open quantum system. <i>Physical Review A</i> , 2015, 92, .	2.5	13

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73	Modeling for Non-Markovian Quantum Systems. IEEE Transactions on Control Systems Technology, 2020, 28, 2564-2571.	5.2	13
74	Multi-point Gaussian States, Quadratic Exponential Cost Functionals, and Large Deviations Estimates for Linear Quantum Stochastic Systems. Applied Mathematics and Optimization, 2021, 83, 83-137.	1.6	13
75	Quantum master equation and filter for systems driven by fields in a single photon state. , 2011, , .		11
76	Robust stability of quantum systems with a nonlinear coupling operator. , 2012, , .		11
77	Quantum filter for a class of non-Markovian quantum systems. , 2015, , .		11
78	Limits of optimal control yields achievable with quantum controllers. Physical Review A, 2015, 91, .	2.5	11
79	On the certainty equivalence principle and the optimal control of partially observed dynamic games. IEEE Transactions on Automatic Control, 1994, 39, 2321-2324.	5.7	10
80	Consistent parameter estimation for partially observed diffusions with small noise. Applied Mathematics and Optimization, 1995, 32, 47-72.	1.6	10
81	On the Infeasibility of Entanglement Generation in Gaussian Quantum Systems via Classical Control. IEEE Transactions on Automatic Control, 2012, 57, 198-203.	5.7	9
82	Feedback policies for measurement-based quantum state manipulation. Physical Review A, 2014, 90, .	2.5	9
83	Robust output feedback control for discrete-time nonlinear systems: the finite-time case. , 0, , .		8
84	Remarks on the application of dynamic programming to the optimal path timing of robot manipulators. International Journal of Robust and Nonlinear Control, 1998, 8, 463-482.	3.7	8
85	On the stability of the information state system. Systems and Control Letters, 1996, 29, 61-72.	2.3	7
86	Risk-sensitive and risk-neutral control for continuous-time hidden Markov models. Applied Mathematics and Optimization, 1996, 34, 37-50.	1.6	7
87	Quantum LQG Control with Quantum Mechanical Controllers. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 9922-9927.	0.4	7
88	Robust stability of uncertain quantum systems. , 2012, , .		7
89	A Reduced Complexity Min-Plus Solution Method to the Optimal Control of Closed Quantum Systems. Applied Mathematics and Optimization, 2014, 70, 469-510.	1.6	7
90	Ground-state stabilization of quantum finite-level systems by dissipation. Automatica, 2016, 65, 147-159.	5.0	7

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91	Parametric randomization, complex symplectic factorizations, and quadratic-exponential functionals for Gaussian quantum states. <i>Infinite Dimensional Analysis, Quantum Probability and Related Topics</i> , 2019, 22, 1950020.	0.5	7
92	Pole placement approach to coherent passive reservoir engineering for storing quantum information. <i>Control Theory and Technology</i> , 2017, 15, 193-205.	1.6	6
93	A Karhunen-Loeve Expansion for One-mode Open Quantum Harmonic Oscillators Using the Eigenbasis of the Two-point Commutator Kernel. , 2019, , .		6
94	A Quantum Karhunen-Loeve Expansion and Quadratic-Exponential Functionals for Linear Quantum Stochastic Systems. , 2019, , .		6
95	Recent developments in nonlinear H ∞ control. <i>Annual Reviews in Control</i> , 1997, 21, 43-54.	7.9	5
96	Risk Sensitive Filtering with Poisson Process Observations. <i>Applied Mathematics and Optimization</i> , 2000, 41, 387-402.	1.6	5
97	A nonsmooth strict bounded real lemma. <i>Systems and Control Letters</i> , 2005, 54, 83-94.	2.3	5
98	On the generalization of linear least mean squares estimation to quantum systems with non-commutative outputs. <i>EPJ Quantum Technology</i> , 2015, 2, .	6.3	5
99	Quantum filter for a non-Markovian single qubit system. , 2015, , .		5
100	Quantum state transfer for multi-input linear quantum systems. , 2016, , .		5
101	Representation and network synthesis for a class of mixed quantum-classical linear stochastic systems. <i>Automatica</i> , 2018, 96, 84-97.	5.0	5
102	A minimax robust decoding algorithm. <i>IEEE Transactions on Information Theory</i> , 2000, 46, 1158-1167.	2.4	4
103	Worst Case Power Generating Capabilities of Nonlinear Systems. <i>Mathematics of Control, Signals, and Systems</i> , 2002, 15, 13-41.	2.3	4
104	-bounded robust control of nonlinear cascade systems. <i>Systems and Control Letters</i> , 2005, 54, 215-224.	2.3	4
105	On Computation of Optimal Switching HJB Equation. , 2006, , .		4
106	Minimum time control of spin systems via dynamic programming. , 2008, , .		4
107	Regulation and tracking of two-level quantum systems using measurement feedback. , 2009, , .		4
108	An efficient computational method for the optimal control of higher dimensional quantum systems. , 2010, , .		4

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109	Dynamic programming and viscosity solutions for the optimal control of quantum spin systems. <i>Systems and Control Letters</i> , 2011, 60, 726-733.	2.3	4
110	Measurement-based generation of shaped single photons and coherent state superpositions in optical cavities. <i>Physical Review A</i> , 2017, 95, .	2.5	4
111	A Girsanov Type Representation of Quadratic-Exponential Cost Functionals for Linear Quantum Stochastic Systems. , 2020, , .		4
112	Frequency-Domain Computation of Quadratic-Exponential Cost Functionals for Linear Quantum Stochastic Systems. <i>IFAC-PapersOnLine</i> , 2020, 53, 293-298.	0.9	4
113	Numerical approximation for nonlinear filtering and finite-time observers. , 1992, , 159-175.		3
114	Implementation of a dynamic game controller for partially observed discrete-time nonlinear systems. , 0, , .		3
115	An explicit finite difference method for finite-time observers. <i>International Journal of Robust and Nonlinear Control</i> , 1994, 4, 791-806.	3.7	3
116	The Interpretation of Discontinuous State Feedback Control Laws as Nonanticipative Control Strategies in Differential Games. <i>IEEE Transactions on Automatic Control</i> , 2004, 49, 1360-1365.	5.7	3
117	Pathwise solution of a class of stochastic master equations. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005, 7, 293-299.	1.4	3
118	H^∞ Control of Linear Quantum Systems. , 2006, , .		3
119	Atom-laser coherence via multiloop feedback control. <i>Physical Review A</i> , 2009, 79, .	2.5	3
120	Pole placement design for quantum systems via coherent observers. , 2015, , .		3
121	LQG feedback control of a class of linear non-Markovian quantum systems. , 2016, , .		3
122	Cross-phase modulation and entanglement in a compound gradient echo memory. <i>Physical Review A</i> , 2016, 93, .	2.5	3
123	The series product for gaussian quantum input processes. <i>Reports on Mathematical Physics</i> , 2017, 79, 111-133.	0.8	3
124	Fan-out Estimation in Spin-based Quantum Computer Scale-up. <i>Scientific Reports</i> , 2017, 7, 13386.	3.3	3
125	Effects of Parametric Uncertainties in Cascaded Open Quantum Harmonic Oscillators and Robust Generation of Gaussian Invariant States. <i>SIAM Journal on Control and Optimization</i> , 2019, 57, 1597-1628.	2.1	3
126	Quantum filtering for systems driven by fermion fields. <i>Communications in Information and Systems</i> , 2011, 11, 237-268.	0.5	3

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127	Quadratic-exponential functionals of Gaussian quantum processes. Infinite Dimensional Analysis, Quantum Probability and Related Topics, 2021, 24, .	0.5	3
128	Risk-Sensitive Filtering and Smoothing for Continuous-Time Markov Processes. IEEE Transactions on Information Theory, 2005, 51, 1731-1738.	2.4	2
129	Reduced-complexity nonlinear H_{∞} control of discrete-time systems. IEEE Transactions on Automatic Control, 2005, 50, 1808-1811.	5.7	2
130	L ¹ -Bounded Robust Control for Hybrid Systems. , 2006, , .		2
131	Laser-cavity frequency locking using modern control. , 2007, , .		2
132	Non-abelian Weyl commutation relations and the series product of quantum stochastic evolutions. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2012, 370, 5437-5451.	3.4	2
133	Perfect single device absorber of arbitrary traveling single photon fields with a tunable coupling parameter: A QSDE approach. , 2016, , .		2
134	Continuous-mode operation of a noiseless linear amplifier. Physical Review A, 2016, 93, .	2.5	2
135	Entropy Evolution in Consensus Networks. Scientific Reports, 2017, 7, 1520.	3.3	2
136	Reaching Agreement in Quantum Hybrid Networks. Scientific Reports, 2017, 7, 5989.	3.3	2
137	FEEDBACK CONTROL OF QUANTUM SYSTEMS. , 2008, , .		2
138	A Systems Theory Approach to the Synthesis of Minimum Noise Phase-Insensitive Quantum Amplifiers. , 2018, , .		2
139	Quantum Estimation and Control. The Electrical Engineering Handbook, 2010, , 31-1-31-42.	0.2	2
140	Measurement-based Feedback Control of Linear Quantum Stochastic Systems with Quadratic-Exponential Criteria. IFAC-PapersOnLine, 2020, 53, 304-309.	0.9	2
141	Pathwise solution of a class of quantum filtering equations. , 2004, , .		1
142	H_{∞} control for discrete-time nonlinear switching systems. International Journal of Robust and Nonlinear Control, 2008, 18, 1451-1481.	3.7	1
143	A System Theory Proof of the Infeasibility of Entanglement Generation in Gaussian Quantum Systems via Classical Control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 144-149.	0.4	1
144	Guest Editorial: Special Issue on Control of Quantum Mechanical Systems. IEEE Transactions on Automatic Control, 2012, 57, 1893-1895.	5.7	1

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145	H [∞] control of quantum feedback control systems with time delay. , 2015, , .		1
146	Direct and indirect couplings in the interconnection of open two level quantum systems. , 2015, , .		1
147	Single photon inverting pulse for an atom in a cavity. , 2015, , .		1
148	A tutorial introduction to quantum feedback control. , 2015, , .		1
149	Coherent observer engineering for protecting quantum information. , 2016, , .		1
150	Equalization for linear quantum channels. , 2017, , .		1
151	A Systems Theory Approach to the Synthesis of Non-Reciprocal Phase-Insensitive Quantum Amplifiers. , 2019, , .		1
152	Low Power Data Acquisition System for Noise Pollution Monitoring. , 2020, , .		1
153	Recent Developments in Nonlinear H [∞] Control *. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1995, 28, 541-552.	0.4	0
154	Quantum behaviors and networks. , 2008, , .		0
155	Feedback control of entanglement in a linear quantum network: A case study. , 2008, , .		0
156	A network synthesis theorem for linear dynamical quantum stochastic systems. , 2009, , .		0
157	Simplifying oscillometric blood pressure measurement models using global sensitivity analysis. , 2012, , .		0
158	Stability of quantum Markov systems via Lyapunov methods in the Heisenberg picture. , 2013, , .		0
159	Extended LMI approach to coherent quantum LQG control design. , 2013, , .		0
160	Covariance matrix tracking coherent observers for linear quantum stochastic systems. , 2015, , .		0
161	Agreeing over quantum hybrid networks: Centralized and distributed solutions. , 2016, , .		0
162	H [∞] Filtering For An Optical Cavity System Disturbed By Lorentzian Quantum Noise * *This research was supported under Australian Research Council's Discovery Projects and Laureate Fellowships funding schemes (Projects DP140101779 and FL110100020), and the Air Force Office of Scientific Research (AFOSR) under agreement FA2386-16-1-4065.. IFAC-PapersOnLine, 2017, 50, 13009-13013.	0.9	0

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163	Special issue on quantum control Dedicated to the occasion of Prof. Ian Petersen's 60th birthday. Control Theory and Technology, 2017, 15, 161-162.	1.6	0
164	Quantum Networks. , 2021, , 1800-1807.		0
165	Nonlinear Semigroups for Partially Observed Risk-Sensitive Control and Minimax Games. , 1999, , 57-73.		0
166	Quantum Networks. , 2020, , 1-8.		0