

Matthew R James

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

149 papers	3,805 citations	31 h-index	58 g-index
167 ext. papers	4,788 ext. citations	3.1 avg, IF	5.63 L-index

#	Paper	IF	Citations
149	\mathcal{H}^{∞} Control of Linear Quantum Stochastic Systems. <i>IEEE Transactions on Automatic Control</i> , 2008 , 53, 1787-1803	5.9	293
148	An Introduction to Quantum Filtering. <i>SIAM Journal on Control and Optimization</i> , 2007 , 46, 2199-2241	1.9	263
147	The Series Product and Its Application to Quantum Feedforward and Feedback Networks. <i>IEEE Transactions on Automatic Control</i> , 2009 , 54, 2530-2544	5.9	258
146	Coherent quantum LQG control. <i>Automatica</i> , 2009 , 45, 1837-1846	5.7	184
145	Minimax optimal control of stochastic uncertain systems with relative entropy constraints. <i>IEEE Transactions on Automatic Control</i> , 2000 , 45, 398-412	5.9	155
144	. <i>IEEE Transactions on Automatic Control</i> , 1994 , 39, 780-792	5.9	154
143	Quantum Feedback Networks: Hamiltonian Formulation. <i>Communications in Mathematical Physics</i> , 2009 , 287, 1109-1132	2	115
142	Squeezing components in linear quantum feedback networks. <i>Physical Review A</i> , 2010 , 81,	2.6	98
141	Dynamic Observers as Asymptotic Limits of Recursive Filters: Special Cases. <i>SIAM Journal on Applied Mathematics</i> , 1988 , 48, 1147-1158	1.8	98
140	Network Synthesis of Linear Dynamical Quantum Stochastic Systems. <i>SIAM Journal on Control and Optimization</i> , 2009 , 48, 2686-2718	1.9	92
139	Asymptotic analysis of nonlinear stochastic risk-sensitive control and differential games. <i>Mathematics of Control, Signals, and Systems</i> , 1992 , 5, 401-417	1.3	91
138	. <i>IEEE Transactions on Automatic Control</i> , 2011 , 56, 1535-1550	5.9	87
137	Robustness and risk-sensitive filtering. <i>IEEE Transactions on Automatic Control</i> , 2002 , 47, 451-461	5.9	81
136	A partial differential inequality for dissipative nonlinear systems. <i>Systems and Control Letters</i> , 1993 , 21, 315-320	2.4	72
135	Quantum Dissipative Systems and Feedback Control Design by Interconnection. <i>IEEE Transactions on Automatic Control</i> , 2010 , 55, 1806-1821	5.9	70
134	Risk-sensitive optimal control of quantum systems. <i>Physical Review A</i> , 2004 , 69,	2.6	69
133	. <i>IEEE Transactions on Automatic Control</i> , 1995 , 40, 1007-1017	5.9	64

132	A Discrete Invitation to Quantum Filtering and Feedback Control. <i>SIAM Review</i> , 2009 , 51, 239-316	7.4	63
131	Conditions for stability of the extended Kalman filter and their application to the frequency tracking problem. <i>Mathematics of Control, Signals, and Systems</i> , 1995 , 8, 1-26	1.3	63
130	Quantum filtering for systems driven by fields in single-photon states or superposition of coherent states. <i>Physical Review A</i> , 2012 , 86,	2.6	60
129	Partially Observed Differential Games, Infinite-Dimensional Hamilton-Jacobi-Bellman Equations, and Nonlinear H_∞ Control. <i>SIAM Journal on Control and Optimization</i> , 1996 , 34, 1342-1364	1.9	58
128	Avoiding entanglement sudden death via measurement feedback control in a quantum network. <i>Physical Review A</i> , 2008 , 78,	2.6	50
127	Stability, gain, and robustness in quantum feedback networks. <i>Physical Review A</i> , 2006 , 73,	2.6	48
126	Quantum feedback networks and control: A brief survey. <i>Science Bulletin</i> , 2012 , 57, 2200-2214		46
125	Nonlinear state estimation for uncertain systems with an integral constraint. <i>IEEE Transactions on Signal Processing</i> , 1998 , 46, 2926-2937	4.8	39
124	Extending H ∞ Control to Nonlinear Systems: Control of Nonlinear Systems to Achieve Performance Objectives 1999 ,		39
123	Robust and accurate time-optimal path-tracking control for robot manipulators. <i>IEEE Transactions on Automation Science and Engineering</i> , 1997 , 13, 880-890		37
122	Robust stability of uncertain linear quantum systems. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012 , 370, 5354-63	3	36
121	. <i>IEEE Transactions on Information Theory</i> , 1996 , 42, 593-605	2.8	36
120	On the Composition of the Top Layer of Microphase Separated Thin PS-PEO Films. <i>Macromolecules</i> , 2009 , 42, 4801-4808	5.5	34
119	Robust Properties of Risk-Sensitive Control. <i>Mathematics of Control, Signals, and Systems</i> , 2000 , 13, 318-332	1.3	34
118	The Hamiltonian-Jacobi-Bellman Equation for Time-Optimal Control. <i>SIAM Journal on Control and Optimization</i> , 1989 , 27, 1477-1489	1.9	31
117	A quantum Langevin formulation of risk-sensitive optimal control. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005 , 7, S198-S207		30
116	Asymptotic Series and Exit Time Probabilities. <i>Annals of Probability</i> , 1992 , 20, 1369	1.9	30
115	Analysis of input-to-state stability for discrete time nonlinear systems via dynamic programming. <i>Automatica</i> , 2005 , 41, 2055-2065	5.7	29

114	On the Response of Quantum Linear Systems to Single Photon Input Fields. <i>IEEE Transactions on Automatic Control</i> , 2013 , 58, 1221-1235	5.9	27
113	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	1.3	26
112	The risk-sensitive index and the H_2 and H_∞ norms for nonlinear systems. <i>Mathematics of Control, Signals, and Systems</i> , 1995 , 8, 199-221	1.3	26
111	Performance analysis and controller synthesis for nonlinear systems with stochastic uncertainty constraints. <i>Automatica</i> , 1996 , 32, 959-972	5.7	26
110	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	1.6	25
109	Numerical approximation of the H_∞ norm for nonlinear systems. <i>Automatica</i> , 1995 , 31, 1075-1086	5.7	25
108	Heisenberg picture approach to the stability of quantum Markov systems. <i>Journal of Mathematical Physics</i> , 2014 , 55, 062701	1.2	22
107	Quantum observer for linear quantum stochastic systems 2012 ,		21
106	Dissipativity and nonlinear systems with finite power gain. <i>International Journal of Robust and Nonlinear Control</i> , 1998 , 8, 699-724	3.6	19
105	. <i>IEEE Transactions on Automatic Control</i> , 2005 , 50, 1681-1697	5.9	19
104	Zero-dynamics principle for perfect quantum memory in linear networks. <i>New Journal of Physics</i> , 2014 , 16, 073032	2.9	18
103	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	17
102	Gap Metrics, Representations, and Nonlinear Robust Stability. <i>SIAM Journal on Control and Optimization</i> , 2005 , 43, 1535-1582	1.9	16
101	Quantum feedback control of linear stochastic systems with feedback-loop time delays. <i>Automatica</i> , 2015 , 52, 277-282	5.7	15
100	Quantum trajectories for a class of continuous matrix product input states. <i>New Journal of Physics</i> , 2014 , 16, 075008	2.9	15
99	Effects of measurement backaction in the stabilization of a Bose-Einstein condensate through feedback. <i>Physical Review A</i> , 2007 , 76,	2.6	15
98	Quantum Risk-Sensitive Control 2006 ,		15
97	NONLINEAR DISCRETE-TIME RISK-SENSITIVE OPTIMAL CONTROL. <i>International Journal of Robust and Nonlinear Control</i> , 1996 , 6, 1-19	3.6	15

96	Single photon quantum filtering using non-Markovian embeddings. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012 , 370, 5408-21	3	14
95	Dissipative control systems synthesis with full state feedback. <i>Mathematics of Control, Signals, and Systems</i> , 1998 , 11, 335-356	1.3	14
94			14
93	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,	2.6	13
92	Quantum optical realization of classical linear stochastic systems. <i>Automatica</i> , 2013 , 49, 3090-3096	5.7	13
91	A Popov stability condition for uncertain linear quantum systems 2013 ,		13
90	Optimal Control of Hybrid Systems and a System of Quasi-Variational Inequalities. <i>SIAM Journal on Control and Optimization</i> , 2006 , 45, 722-761	1.9	13
89	l^{∞} -bounded robustness for nonlinear systems: analysis and synthesis. <i>IEEE Transactions on Automatic Control</i> , 2003 , 48, 1875-1891	5.9	13
88	Cavity driven by a single photon: Conditional dynamics and nonlinear phase shift. <i>Physical Review A</i> , 2012 , 86,	2.6	12
87	Robust Stabilization of Nonlinear Systems via Normalized Coprime Factor Representations. <i>Automatica</i> , 1998 , 34, 1593-1599	5.7	12
86	Rates of Convergence for Approximation Schemes in Optimal Control. <i>SIAM Journal on Control and Optimization</i> , 1998 , 36, 719-741	1.9	12
85	Analysis and control of quantum finite-level systems driven by single-photon input states. <i>Automatica</i> , 2016 , 69, 18-23	5.7	11
84	Finite Time Observer Design by Probabilistic-Variational Methods. <i>SIAM Journal on Control and Optimization</i> , 1991 , 29, 954-967	1.9	11
83	Quantum master equation and filter for systems driven by fields in a single photon state 2011 ,		10
82	Robust stability of quantum systems with a nonlinear coupling operator 2012 ,		10
81	Gate complexity using dynamic programming. <i>Physical Review A</i> , 2008 , 78,	2.6	10
80	Synthesis and structure of mixed quantum-classical linear systems 2012 ,		9
79	Homodyne locking of a squeezer. <i>Optics Letters</i> , 2009 , 34, 2465-7	3	9

78	Reduced-complexity numerical method for optimal gate synthesis. <i>Physical Review A</i> , 2010 , 82,	2.6	9
77	. <i>IEEE Transactions on Automatic Control</i> , 1994 , 39, 2321-2324	5.9	9
76	Quantum filter for a class of non-Markovian quantum systems 2015 ,		8
75	Consistent parameter estimation for partially observed diffusions with small noise. <i>Applied Mathematics and Optimization</i> , 1995 , 32, 47-72	1.5	8
74	Limits of optimal control yields achievable with quantum controllers. <i>Physical Review A</i> , 2015 , 91,	2.6	7
73	A nonlinear partially observed differential game with a finite-dimensional information state. <i>Systems and Control Letters</i> , 1995 , 26, 137-145	2.4	7
72	Coherent observers for linear quantum stochastic systems. <i>Automatica</i> , 2016 , 71, 264-271	5.7	7
71	On the Infeasibility of Entanglement Generation in Gaussian Quantum Systems via Classical Control. <i>IEEE Transactions on Automatic Control</i> , 2012 , 57, 198-203	5.9	6
70	Remarks on the application of dynamic programming to the optimal path timing of robot manipulators. <i>International Journal of Robust and Nonlinear Control</i> , 1998 , 8, 463-482	3.6	6
69	Multi-point Gaussian States, Quadratic Exponential Cost Functionals, and Large Deviations Estimates for Linear Quantum Stochastic Systems. <i>Applied Mathematics and Optimization</i> , 2021 , 83, 83-137	1.5	6
68	Ground-state stabilization of quantum finite-level systems by dissipation. <i>Automatica</i> , 2016 , 65, 147-159	5.7	5
67	Feedback policies for measurement-based quantum state manipulation. <i>Physical Review A</i> , 2014 , 90,	2.6	5
66	Robust stability of uncertain quantum systems 2012 ,		5
65	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	0.6	5
64	A Reduced Complexity Min-Plus Solution Method to the Optimal Control of Closed Quantum Systems. <i>Applied Mathematics and Optimization</i> , 2014 , 70, 469-510	1.5	4
63	Pole placement approach to coherent passive reservoir engineering for storing quantum information. <i>Control Theory and Technology</i> , 2017 , 15, 193-205	1	4
62	Coherently tracking the covariance matrix of an open quantum system. <i>Physical Review A</i> , 2015 , 92,	2.6	4
61	Quantum filter for a non-Markovian single qubit system 2015 ,		4

60	A nonsmooth strict bounded real lemma. <i>Systems and Control Letters</i> , 2005 , 54, 83-94	2.4	4
59	-bounded robust control of nonlinear cascade systems. <i>Systems and Control Letters</i> , 2005 , 54, 215-224	2.4	4
58	On the stability of the information state system. <i>Systems and Control Letters</i> , 1996 , 29, 61-72	2.4	4
57			4
56	Modeling for Non-Markovian Quantum Systems. <i>IEEE Transactions on Control Systems Technology</i> , 2020 , 28, 2564-2571	4.8	4
55	A Quantum Karhunen-Loeve Expansion and Quadratic-Exponential Functionals for Linear Quantum Stochastic Systems* 2019 ,		4
54	Representation and network synthesis for a class of mixed quantumclassical linear stochastic systems. <i>Automatica</i> , 2018 , 96, 84-97	5.7	3
53	Measurement-based generation of shaped single photons and coherent state superpositions in optical cavities. <i>Physical Review A</i> , 2017 , 95,	2.6	3
52	Dynamic programming and viscosity solutions for the optimal control of quantum spin systems. <i>Systems and Control Letters</i> , 2011 , 60, 726-733	2.4	3
51	Atom-laser coherence via multiloop feedback control. <i>Physical Review A</i> , 2009 , 79,	2.6	3
50	Quantum LQG Control with Quantum Mechanical Controllers. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2008 , 41, 9922-9927		3
49	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	5.9	3
48	Pathwise solution of a class of stochastic master equations. <i>Journal of Optics B: Quantum and Semiclassical Optics</i> , 2005 , 7, 293-299		3
47	Risk Sensitive Filtering with Poisson Process Observations. <i>Applied Mathematics and Optimization</i> , 2000 , 41, 387-402	1.5	3
46	Risk-sensitive and risk-neutral control for continuous-time hidden Markov models. <i>Applied Mathematics and Optimization</i> , 1996 , 34, 37-50	1.5	3
45	A Girsanov Type Representation of Quadratic-Exponential Cost Functionals for Linear Quantum Stochastic Systems* 2020 ,		3
44	Frequency-Domain Computation of Quadratic-Exponential Cost Functionals for Linear Quantum Stochastic Systems. <i>IFAC-PapersOnLine</i> , 2020 , 53, 293-298	0.7	3
43	Quantum state transfer for multi-input linear quantum systems 2016 ,		3

42	A Karhunen-Loeve Expansion for One-mode Open Quantum Harmonic Oscillators Using the Eigenbasis of the Two-point Commutator Kernel 2019 ,		3
41	Fan-out Estimation in Spin-based Quantum Computer Scale-up. <i>Scientific Reports</i> , 2017 , 7, 13386	4.9	2
40	Cross-phase modulation and entanglement in a compound gradient echo memory. <i>Physical Review A</i> , 2016 , 93,	2.6	2
39	Reaching Agreement in Quantum Hybrid Networks. <i>Scientific Reports</i> , 2017 , 7, 5989	4.9	2
38	Pole placement design for quantum systems via coherent observers 2015 ,		2
37	Regulation and tracking of two-level quantum systems using measurement feedback 2009 ,		2
36	Non-abelian Weyl commutation relations and the series product of quantum stochastic evolutions. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2012 , 370, 5437-51	3	2
35	Minimum time control of spin systems via dynamic programming 2008 ,		2
34	H ∞ Control of Linear Quantum Systems 2006 ,		2
33	L ∞ Bounded Robust Control for Hybrid Systems 2006 ,		2
32	On Computation of Optimal Switching HJB Equation 2006 ,		2
31	Worst Case Power Generating Capabilities of Nonlinear Systems. <i>Mathematics of Control, Signals, and Systems</i> , 2002 , 15, 13-41	1.3	2
30			2
29	An explicit finite difference method for finite-time observers. <i>International Journal of Robust and Nonlinear Control</i> , 1994 , 4, 791-806	3.6	2
28	Numerical approximation for nonlinear filtering and finite-time observers 1992 , 159-175		2
27	FEEDBACK CONTROL OF QUANTUM SYSTEMS 2008 ,		2
26	LQG feedback control of a class of linear non-Markovian quantum systems 2016 ,		2
25	The series product for gaussian quantum input processes. <i>Reports on Mathematical Physics</i> , 2017 , 79, 111-133	0.8	1

24	Continuous-mode operation of a noiseless linear amplifier. <i>Physical Review A</i> , 2016 , 93,	2.6	1
23	Entropy Evolution in Consensus Networks. <i>Scientific Reports</i> , 2017 , 7, 1520	4.9	1
22	On the generalization of linear least mean squares estimation to quantum systems with non-commutative outputs. <i>EPJ Quantum Technology</i> , 2015 , 2,	6.9	1
21	A tutorial introduction to quantum feedback control 2015 ,		1
20	An efficient computational method for the optimal control of higher dimensional quantum systems 2010 ,		1
19	. <i>IEEE Transactions on Automatic Control</i> , 2012 , 57, 1893-1895	5.9	1
18	Recent developments in nonlinear H_∞ control. <i>Annual Reviews in Control</i> , 1997 , 21, 43-54	10.3	1
17	H_∞ control for discrete-time nonlinear switching systems. <i>International Journal of Robust and Nonlinear Control</i> , 2008 , 18, 1451-1481	3.6	1
16	Laser-cavity frequency locking using modern control 2007 ,		1
15	Reduced-complexity nonlinear H_∞ control of discrete-time systems. <i>IEEE Transactions on Automatic Control</i> , 2005 , 50, 1808-1811	5.9	1
14	Pathwise solution of a class of quantum filtering equations 2004 ,		1
13	Quadratic-exponential functionals of Gaussian quantum processes. <i>Infinite Dimensional Analysis, Quantum Probability and Related Topics</i> ,	0.6	1
12	Quantum filtering for systems driven by fermion fields. <i>Communications in Information and Systems</i> , 2011 , 11, 237-268	0.8	1
11	Low Power Data Acquisition System for Noise Pollution Monitoring 2020 ,		1
10	Measurement-based Feedback Control of Linear Quantum Stochastic Systems with Quadratic-Exponential Criteria. <i>IFAC-PapersOnLine</i> , 2020 , 53, 304-309	0.7	1
9	Quantum Estimation and Control. <i>The Electrical Engineering Handbook</i> , 2010 , 31-1-31-42		1
8	Perfect single device absorber of arbitrary traveling single photon fields with a tunable coupling parameter: A QSDE approach 2016 ,		1
7	Risk-sensitive filtering and smoothing for continuous-time Markov Processes. <i>IEEE Transactions on Information Theory</i> , 2005 , 51, 1731-1738	2.8	0

- 6 Effects of Parametric Uncertainties in Cascaded Open Quantum Harmonic Oscillators and Robust Generation of Gaussian Invariant States. *SIAM Journal on Control and Optimization*, **2019**, 57, 1597-1628 ^{1.9} ⁰
- 5 H ∞ Filtering For An Optical Cavity System Disturbed By Lorentzian Quantum Noise. *IFAC-PapersOnLine*, **2017**, 50, 13009-13013 ^{0.7}
- 4 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
- 3 . *IEEE Transactions on Information Theory*, **2000**, 46, 1158-1167 ^{2.8}
- 2 Recent Developments in Nonlinear H ∞ Control *. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **1995**, 28, 541-552
- 1 Nonlinear Semigroups for Partially Observed Risk-Sensitive Control and Minimax Games **1999**, 57-73