Andrew R Teel

List of Publications by Year
in descending order

146 papers	7,658 citations	109321 35 h-index	60623 81 g-index
147 all docs	147 docs citations	147 times ranked	3369 citing authors

#	Article	IF	Citations
1	Hybrid dynamical systems. IEEE Control Systems, 2009, 29, 28-93.	0.8	1,255
2	Periodic Event-Triggered Control for Linear Systems. IEEE Transactions on Automatic Control, 2013, 58, 847-861.	5.7	1,046
3	Networked Control Systems With Communication Constraints: Tradeoffs Between Transmission Intervals, Delays and Performance. IEEE Transactions on Automatic Control, 2010, 55, 1781-1796.	5.7	735
4	A Lyapunov Proof of an Improved Maximum Allowable Transfer Interval for Networked Control Systems. IEEE Transactions on Automatic Control, 2007, 52, 892-897.	5.7	284
5	Invariance Principles for Hybrid Systems With Connections to Detectability and Asymptotic Stability. IEEE Transactions on Automatic Control, 2007, 52, 2282-2297.	5.7	251
6	Stability and Performance for Saturated Systems via Quadratic and Nonquadratic Lyapunov Functions. IEEE Transactions on Automatic Control, 2006, 51, 1770-1786.	5.7	233
7	Stability properties of reset systems. Automatica, 2008, 44, 2019-2026.	5.0	209
8	Smooth Lyapunov Functions for Hybrid Systems Part II: (Pre)Asymptotically Stable Compact Sets. IEEE Transactions on Automatic Control, 2008, 53, 734-748.	5.7	157
9	Anti-windup for exponentially unstable linear systems. International Journal of Robust and Nonlinear Control, 1999, 9, 701-716.	3.7	128
10	Hybrid systems: Generalized solutions and robust stability. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 1-12.	0.4	114
11	Stability and Performance of SISO Control Systems With First-Order Reset Elements. IEEE Transactions on Automatic Control, 2011, 56, 2567-2582.	5.7	112
12	Smooth Lyapunov functions and robustness of stability for difference inclusions. Systems and Control Letters, 2004, 52, 395-405.	2.3	107
13	Lyapunov-Based Small-Gain Theorems for Hybrid Systems. IEEE Transactions on Automatic Control, 2014, 59, 1395-1410.	5.7	94
14	On the Robustness of $mathcalKL$-stability for Difference Inclusions: Smooth Discrete-Time Lyapunov Functions. SIAM Journal on Control and Optimization, 2005, 44, 777-800.	2.1	87
15	Nominally Robust Model Predictive Control With State Constraints. IEEE Transactions on Automatic Control, 2007, 52, 1856-1870.	5.7	85
16	A framework for a class of hybrid extremum seeking controllers with dynamic inclusions. Automatica, 2017, 76, 113-126.	5.0	81
17	Lyapunov-Based Sufficient Conditions for Exponential Stability in Hybrid Systems. IEEE Transactions on Automatic Control, 2013, 58, 1591-1596.	5.7	77
18	Integral Characterizations of Uniform Asymptotic and Exponential Stability with Applications. Mathematics of Control, Signals, and Systems, 2002, 15, 177-201.	2.3	73

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19	Robust global asymptotic attitude stabilization of a rigid body by quaternion-based hybrid feedback. , 2009, , .		65
20	Quaternion-Based Hybrid Feedback for Robust Global Attitude Synchronization. IEEE Transactions on Automatic Control, 2012, 57, 2122-2127.	5.7	64
21	Analytical and numerical Lyapunov functions for SISO linear control systems with firstâ€order reset elements. International Journal of Robust and Nonlinear Control, 2011, 21, 1134-1158.	3.7	62
22	Internal Model Principle for Linear Systems With Periodic State Jumps. IEEE Transactions on Automatic Control, 2013, 58, 2788-2802.	5.7	62
23	On Assigning the Derivative of a Disturbance Attenuation Control Lyapunov Function. Mathematics of Control, Signals, and Systems, 2000, 13, 95-124.	2.3	61
24	Synergistic Hybrid Feedback for Global Rigid-Body Attitude Tracking on <formula formulatype="inline"><tex Notation="TeX">$hbox{ SO }(3)^{ast}$</tex></formula> <formula formulatype="inline"><tex Notation="TeX">${ssr {SO}}(3)^{ast}$</tex></formula>. IEEE Transactions on Automatic Control, 2013, 58, 2730-2742.	5.7	61
25	Follow the Bouncing Ball: Global Results on Tracking and State Estimation With Impacts. IEEE Transactions on Automatic Control, 2013, 58, 1470-1485.	5.7	61
26	Inputâ€“output-to-state stability for discrete-time systems. Automatica, 2008, 44, 326-336.	5.0	60
27	Robust linear anti-windup synthesis for recovery of unconstrained performance. International Journal of Robust and Nonlinear Control, 2004, 14, 1133-1168.	3.7	58
28	On quaternion-based attitude control and the unwinding phenomenon. , 2011, , .		55
29	On singular perturbations due to fast actuators in hybrid control systems. Automatica, 2011, 47, 692-701.	5.0	54
30	Analysis for a class of singularly perturbed hybrid systems via averaging. Automatica, 2012, 48, 1057-1068.	5.0	51
31	Stability of Delay Impulsive Systems with Application to Networked Control Systems. Proceedings of the American Control Conference, 2007, , .	0.0	46
32	Discrete-time asymptotic controllability implies smooth control-Lyapunov function. Systems and Control Letters, 2004, 52, 349-359.	2.3	44
33	Asymptotic stability in probability for Stochastic Boolean Networks. Automatica, 2017, 83, 1-9.	5.0	41
34	A hybrid fixed-time observer for state estimation of linear systems. Automatica, 2018, 87, 103-112.	5.0	41
35	Robust Source-Seeking Hybrid Controllers for Autonomous Vehicles. Proceedings of the American Control Conference, 2007, , .	0.0	39
36	Model-Based Dynamic Event-Triggered Control for Systems With Uncertainty: A Hybrid System Approach. IEEE Transactions on Automatic Control, 2021, 66, 444-451.	5.7	39

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37	A theorem for UGAS and ULES of (passive) nonautonomous systems: robust control of mechanical systems and ships. International Journal of Robust and Nonlinear Control, 2001, 11, 95-108.	3.7	36
38	A Robust Event-Triggered Approach for Fast Sampled-Data Extremization and Learning. IEEE Transactions on Automatic Control, 2017, 62, 4949-4964.	5.7	36
39	A hybrid systems approach to trajectory tracking control for juggling systems. , 2007, , .		35
40	Asymptotic Stability in Hybrid Systems via Nested Matrosov Functions. IEEE Transactions on Automatic Control, 2009, 54, 1569-1574.	5.7	35
41	Line-of-sight path-following along regularly parametrized curves solved as a generic maneuvering problem. , 2011, , .		34
42	Structural Properties of a Class of Linear Hybrid Systems and Output Feedback Stabilization. IEEE Transactions on Automatic Control, 2017, 62, 2704-2719.	5.7	34
43	Hybrid online learning control in networked multiagent systems: A survey. International Journal of Adaptive Control and Signal Processing, 2019, 33, 228-261.	4.1	34
44	Robust Nonlinear Regulation: Continuous-Time Internal Models and Hybrid Identifiers. IEEE Transactions on Automatic Control, 2017, 62, 3136-3151.	5.7	33
45	Robust source-seeking hybrid controllers for nonholonomic vehicles. , 2008, , .		31
46	A Converse Lyapunov Theorem and Robustness for Asymptotic Stability in Probability. IEEE Transactions on Automatic Control, 2014, 59, 2426-2441.	5.7	31
47	Lyapunov-Based Sufficient Conditions for Stability of Hybrid Systems With Memory. IEEE Transactions on Automatic Control, 2016, 61, 1057-1062.	5.7	31
48	Global Asymptotic Stability of a PID Control System With Coulomb Friction. IEEE Transactions on Automatic Control, 2018, 63, 2654-2661.	5.7	30
49	Invariance-Like Results for Nonautonomous Switched Systems. IEEE Transactions on Automatic Control, 2019, 64, 614-627.	5.7	30
50	A Nonsmooth Hybrid Invariance Principle Applied to Robust Event-Triggered Design. IEEE Transactions on Automatic Control, 2019, 64, 2061-2068.	5.7	29
51	Distributed robust Nash equilibrium seeking for aggregative games under persistent attacks: A hybrid systems approach. Automatica, 2020, 122, 109255.	5.0	28
52	A Matrosov Theorem for Adversarial Markov Decision Processes. IEEE Transactions on Automatic Control, 2013, 58, 2142-2148.	5.7	27
53	Hybrid mechanisms for robust synchronization and coordination of multi-agent networked sampled-data systems. Automatica, 2019, 99, 41-53.	5.0	27
54	A converse Lyapunov theorem for strong global recurrence. Automatica, 2013, 49, 2963-2974.	5.0	26

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55	Hybrid control of rigid-body attitude with synergistic potential functions. , 2011, , .		24
56	Hybrid control of planar rotations. , 2010, , .		23
57	Input-to-state stability analysis for interconnected difference equations with delay. Mathematics of Control, Signals, and Systems, 2012, 24, 33-54.	2.3	23
58	Robust hybrid source-seeking algorithms based on directional derivatives and their approximations. , 2008, , .		21
59	Output feedback synthesis for sampled-data system with input saturation. , 2010, , .		21
60	Nonlinear Detectability and Incremental Input/Output-to-State Stability. SIAM Journal on Control and Optimization, 2021, 59, 3017-3039.	2.1	21
61	Further results on static linear anti-windup design for control systems subject to magnitude and rate saturation. , 2006, , .		19
62	A Hybrid Control Strategy for Robust Contact Detection and Force Regulation. Proceedings of the American Control Conference, 2007, , .	0.0	19
63	Linear discrete-time global and regional anti-windup: an LMI approach. International Journal of Control, 2009, 82, 2179-2192.	1.9	19
64	Robust global asymptotic stabilization of a 6-DOF rigid body by quaternion-based hybrid feedback. , 2009, , .		19
65	Flexible Nash seeking using stochastic difference inclusions. , 2015, , .		19
66	Low-power peaking-free high-gain observers for nonlinear systems. , 2016, , .		19
67	State estimation for linear hybrid systems with periodic jumps and unknown inputs. International Journal of Robust and Nonlinear Control, 2020, 30, 5966-5988.	3.7	18
68	A "Throw-and-Catch" Hybrid Control Strategy for Robust Global Stabilization of Nonlinear Systems. Proceedings of the American Control Conference, 2007, , .	0.0	17
69	Relaxed Persistent Flow/Jump Conditions for Uniform Global Asymptotic Stability. IEEE Transactions on Automatic Control, 2014, 59, 2766-2771.	5.7	17
70	Stochastic hybrid systems: A modeling and stability theory tutorial. , 2015, , .		17
71	Robust Finite-Time Parameter Estimation Using a Hybrid Systems Framework. IEEE Transactions on Automatic Control, 2012, 57, 2956-2962.	5.7	16
72	Hybrid control of spherical orientation. , 2010, , .		15

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73	Bounded-Energy-Input Convergent-State Property of Dissipative Nonlinear Systems: An iISS Approach. IEEE Transactions on Automatic Control, 2010, 55, 159-164.	5.7	15
74	A Hybrid Adaptive Feedback Law for Robust Obstacle Avoidance and Coordination in Multiple Vehicle Systems. , 2018, , .		15
75	Synergistic Lyapunov functions and backstepping hybrid feedbacks. , 2011, , .		14
76	Input-to-state stability for a class of hybrid dynamical systems via averaging. Mathematics of Control, Signals, and Systems, 2012, 23, 223-256.	2.3	14
77	$mathcal {L}_2$-Gain Analysis of Periodic Event-Triggered Control and Self-Triggered Control Using Lifting. IEEE Transactions on Automatic Control, 2021, 66, 3749-3756.	5.7	14
78	Robust Coordinated Hybrid Source Seeking With Obstacle Avoidance in Multivehicle Autonomous Systems. IEEE Transactions on Automatic Control, 2022, 67, 706-721.	5.7	14
79	Relaxation Results for Hybrid Inclusions. Set-Valued and Variational Analysis, 2008, 16, 733-757.	0.5	13
80	Lyapunov-based versus Poincaré map analysis of the rimless wheel. , 2014, , .		13
81	Linear Hybrid Systems With Periodic Jumps: A Notion of Strong Observability and Strong Detectability. IEEE Transactions on Automatic Control, 2020, 65, 2640-2646.	5.7	13
82	Global asymptotic stabilization of the inverted equilibrium manifold of the 3-D pendulum by hybrid feedback. , 2010, , .		12
83	Invariance principles for hybrid systems with memory. Nonlinear Analysis: Hybrid Systems, 2016, 21, 130-138.	3.5	12
84	Extremum Seeking Control With Input Dead-Zone. IEEE Transactions on Automatic Control, 2020, 65, 3184-3190.	5.7	12
85	Homogeneous hybrid systems and a converse Lyapunov theorem. , 2006, , .		11
86	Path Following for Nonlinear Systems With Unstable Zero Dynamics: An Averaging Solution. IEEE Transactions on Automatic Control, 2011, 56, 880-886.	5.7	11
87	Stochastic hybrid inclusions with diffusive flows. , 2014, , .		11
88	LQ optimal control for a class of hybrid systems. , 2016, , .		11
89	A hybrid observer for fixed-time state estimation of linear systems. , 2016, , .		11
90	Hybrid Systems with Memory: Existence and Well-posedness of Generalized Solutions. SIAM Journal on Control and Optimization, 2018, 56, 1011-1037.	2.1	11

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91	Set-point stabilization of SISO linear systems using First Order Reset Elements. Proceedings of the American Control Conference, 2007, , .	0.0	10
92	A Unified Lyapunov Approach to Analysis of Oscillations and Stability for Systems With Piecewise Linear Elements. IEEE Transactions on Automatic Control, 2010, 55, 2864-2869.	5.7	10
93	Hybrid gradient descent for robust global optimization on the circle. , 2017, , .		10
94	Smooth patchy control Lyapunov functions. , 2006, , .		8
95	Averaging in singularly perturbed hybrid systems with hybrid boundary layer systems. , 2012, , .		8
96	A class of distributed adaptive pricing mechanisms for societal systems with limited information. , 2017, , .		8
97	Event-Triggered Nonlinear Systems With Stochastic Dynamics, Transmission Times, and Protocols. IEEE Transactions on Automatic Control, 2022, 67, 1973-1979.	5.7	8
98	Results on existence of smooth Lyapunov functions for (pre-)asymptotically stable hybrid systems with non-open basins of attraction. Proceedings of the American Control Conference, 2007, , .	0.0	7
99	Sufficient conditions for robustness of $$mathcal{K}mathcal{L}$$ -stability for difference inclusions. Mathematics of Control, Signals, and Systems, 2007, 19, 183-205.	2.3	7
100	Synergistic control barrier functions with application to obstacle avoidance for nonholonomic vehicles. , 2021, , .		7
101	Characterization of Forced Vibration for Difference Inclusions: A Lyapunov Approach. IEEE Transactions on Circuits and Systems Part 1: Regular Papers, 2007, 54, 1367-1379.	0.1	6
102	Regional, semiglobal, global nonlinear anti-windup via switching design. , 2007, , .		6
103	A nested Matrosov theorem for hybrid systems. , 2008, , .		6
104	Analysis of oscillation and stability for systems with piecewise linear components via saturation functions. , 2009, , .		6
105	Small-gain theorems of LaSalle type for hybrid systems. , 2012, , .		6
106	Weak reachability and strong recurrence for stochastic directed graphs in terms of auxiliary functions. , 2016, , .		6
107	Recurrence Principles and Their Application to Stability Theory for a Class of Stochastic Hybrid Systems. IEEE Transactions on Automatic Control, 2016, 61, 3477-3492.	5.7	6
108	Hybrid Extremum Seeking for Black-Box Optimization in Hybrid Plants: An Analytical Framework. , 2018, , .		6

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109	On the Robust Implementation of Projected Dynamical Systems with Anti-Windup Controllers. , 2020, , .		6
110	LMI-based linear anti-windup for discrete time linear control systems. , 2006, , .		5
111	On necessary and sufficient conditions for exponential and L<inf>2</inf> stability of planar reset systems. , 2008, , .		5
112	Stability for a class of homogeneous hybrid systems by annular Lyapunov analysis. , 2010, , .		5
113	A hybrid seeking approach for robust learning in multi-agent systems. , 2014, , .		5
114	A Recurrence Principle for Stochastic Difference Inclusions. IEEE Transactions on Automatic Control, 2015, 60, 420-435.	5.7	5
115	A Lyapunov theorem certifying global weak reachability for stochastic difference inclusions with random inputs. Systems and Control Letters, 2017, 109, 37-42.	2.3	5
116	Model reduction for linear differential inclusions: moment-set and time-variance. , 2017, , .		5
117	Stochastic Robust Simulation and Stability Properties of Chemical Reaction Networks. IEEE Transactions on Control of Network Systems, 2019, 6, 2-12.	3.7	5
118	On Moment Matching for Stochastic Systems. IEEE Transactions on Automatic Control, 2022, 67, 541-556.	5.7	5
119	Robust global asymptotic attitude synchronization by hybrid control. , 2010, , .		4
120	PWM hybrid control systems: averaging tools for analysis and design. , 2010, , .		4
121	Stochastic Hybrid Inclusions Applied to Global Almost Sure Optimization on Manifolds. , 2018, , .		4
122	Results on Adaptive Output Regulation for Linear Systems by Least-Squares Identifiers. , 2018, , .		4
123	Nested Matrosov function theorem for nonlinear delayed systems. Automatica, 2019, 104, 182-188.	5.0	4
124	The Heavy-Ball ODE with Time-Varying Damping: Persistence of Excitation and Uniform Asymptotic Stability. , 2020, , .		4
125	Nonlinear L 2 Anti-Windup Design: An LMI-Based Approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 1217-1222.	0.4	3
126	High performance anti-windup for robot manipulators. , 2003, , .		3

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127	Analysis of systems with saturation/deadzone via piecewise-quadratic Lyapunov functions. Proceedings of the American Control Conference, 2007, , .	0.0	3
128	Novel results in averaging analysis of singularly perturbed hybrid systems. , 2011, , .		3
129	Event-triggered based on-line optimization for a class of nonlinear systems. , 2015, , .		3
130	Robust constrained model predictive control with persistent model adaptation. , 2016, , .		3
131	Hybrid Constrained Estimation for Linear Time-Varying Systems. , 2018, , .		3
132	Explicit Lyapunov functions for stability and performance characterizations of FOREs connected to an integrator. , 2006, , .		2
133	Analysis of hybrid systems resulting from relay-type hysteresis and saturation: A Lyapunov approach. , 2008, , .		2
134	Uniting a high performance, local controller with a global controller: The output feedback case for linear systems with input saturation. , 2008, , .		2
135	Distributed robust stochastic learning in asynchronous networks of sampled-data systems. , 2016, , .		2
136	Robust design of internal models by discrete recursive least squares identifiers. , 2017, , .		2
137	Model order reduction for stochastic nonlinear systems. , 2017, , .		2
138	On the Continuity of Asymptotically Stable Compact Sets for Simulations of Hybrid Systems. , 2006, , .		1
139	Hybrid systems techniques for convergence of solutions to switching systems. , 2007, , .		1
140	Instability and overshoots of solutions for a class of homogeneous hybrid systems by Lyapunov-like analysis. , 2010, , .		1
141	A hybrid algorithm for finite time parameter estimation. , 2010, , .		1
142	Strong Observability for a Class of Linear Hybrid Systems. , 2018, , .		1
143	Path-following in the Presence of Unstable Zero Dynamics: an Averaging Solution for Nonlinear Systems. Proceedings of the American Control Conference, 2007, , .	0.0	0
144	Uniform stability of sets for difference inclusions under summability criteria. , 2009, , .		0

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145	Global Optimization on the Sphere with Half-space Constraints: A Stochastic Hybrid Systems Approach. , 2019, , .		0
146	A Matrosov Theorem for Hybrid Systems With Memory. IEEE Transactions on Automatic Control, 2021, 66, 4918-4925.	5.7	0