Ricardo G Sanfelice

List of Publications by Citations

188 papers	3,204 citations	24 h-index	53 g-index
245 ext. papers	4,139 ext. citations	3.3 avg, IF	5.86 L-index

#	Paper	IF	Citations
188	. *IEEE Control Systems*, **2009**, 29, 28-93	2.9	930
187	Invariance Principles for Hybrid Systems With Connections to Detectability and Asymptotic Stability. *IEEE Transactions on Automatic Control*, **2007**, 52, 2282-2297	5.9	208
186	. *IEEE Transactions on Automatic Control*, **2011**, 56, 2555-2566	5.9	206
185	Hybrid Dynamical Systems **2012**,		96
184	On the performance of high-gain observers with gain adaptation under measurement noise. *Automatica*, **2011**, 47, 2165-2176	5.7	90
183	Optimal control of Mixed Logical Dynamical systems with Linear Temporal Logic specifications **2008**,		66
182	Robust Global Trajectory Tracking for Underactuated VTOL Aerial Vehicles Using Inner-Outer Loop Control Paradigms. *IEEE Transactions on Automatic Control*, **2017**, 62, 97-112	5.9	65
181	Hybrid systems: Generalized solutions and robust stability. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2004**, 37, 1-12		58
180	Hybrid Dynamical Systems **2012**,		55
179	Generalized solutions to hybrid dynamical systems. *ESAIM - Control, Optimisation and Calculus of Variations*, **2008**, 14, 699-724	1	53
178	Robust Global Stabilization of the DC-DC Boost Converter via Hybrid Control. *IEEE Transactions on Circuits and Systems I: Regular Papers*, **2015**, 62, 1052-1061	3.9	52
177	Invariance principles for switching systems via hybrid systems techniques. *Systems and Control Letters*, **2008**, 57, 980-986	2.4	52
176	A toolbox for simulation of hybrid systems in matlab/simulink **2013**,		48
175	Robust global asymptotic attitude stabilization of a rigid body by quaternion-based hybrid feedback **2009**,		44
174	Quaternion-Based Hybrid Feedback for Robust Global Attitude Synchronization. *IEEE Transactions on Automatic Control*, **2012**, 57, 2122-2127	5.9	42
173	State estimation of linear systems in the presence of sporadic measurements. *Automatica*, **2016**, 73, 101-109	5.7	39
172	Convergence of Nonlinear Observers on BBR^{n} With a Riemannian Metric (Part I). *IEEE Transactions on Automatic Control*, **2012**, 57, 1709-1722	5.9	38

171	On singular perturbations due to fast actuators in hybrid control systems. *Automatica*, **2011**, 47, 692-701	5.7	34
170	. *IEEE Transactions on Automatic Control*, **2013**, 58, 1179-1191	5.9	33
169	On quaternion-based attitude control and the unwinding phenomenon **2011**,		33
168	Robust global trajectory tracking for a class of underactuated vehicles. *Automatica*, **2015**, 58, 90-98	5.7	32
167	A hybrid systems approach to trajectory tracking control for juggling systems **2007**,		29
166	Asymptotic Stability in Hybrid Systems via Nested Matrosov Functions. *IEEE Transactions on Automatic Control*, **2009**, 54, 1569-1574	5.9	27
165	Input-Output-to-State Stability Tools for Hybrid Systems and Their Interconnections. *IEEE Transactions on Automatic Control*, **2014**, 59, 1360-1366	5.9	25
164	Passivity-based control for hybrid systems with applications to mechanical systems exhibiting impacts. *Automatica*, **2013**, 49, 1104-1116	5.7	24
163	Robust Distributed Estimation for Linear Systems Under Intermittent Information. *IEEE Transactions on Automatic Control*, **2018**, 63, 973-988	5.9	24
162	Robust Source-Seeking Hybrid Controllers for Autonomous Vehicles. *Proceedings of the American Control Conference*, **2007**,	1.2	22
161	On the Existence of Control Lyapunov Functions and State-Feedback Laws for Hybrid Systems. *IEEE Transactions on Automatic Control*, **2013**, 58, 3242-3248	5.9	21
160	Dynamical properties of hybrid systems simulators. *Automatica*, **2010**, 46, 239-248	5.7	21
159	Analysis and Design of Cyber-Physical Systems: A Hybrid Control Systems Approach **2015**, 3-31		19
158	An embedding approach for the design of state-feedback tracking controllers for references with jumps. *International Journal of Robust and Nonlinear Control*, **2014**, 24, 1585-1608	3.6	19
157	Robust source-seeking hybrid controllers for nonholonomic vehicles **2008**,		19
156	A finite-time convergent observer with robustness to piecewise-constant measurement noise. *Automatica*, **2015**, 57, 222-230	5.7	16
155	Global trajectory tracking for a class of underactuated vehicles **2013**,		15
154	Robust hybrid source-seeking algorithms based on directional derivatives and their approximations **2008**,		15

153	Global trajectory tracking for underactuated VTOL aerial vehicles using a cascade control paradigm **2013**,		14
152	Supervising a family of hybrid controllers for robust global asymptotic stabilization **2008**,		13
151	Results on input-to-output and input-output-to-state stability for hybrid systems and their interconnections **2010**,		12
150	Robust global asymptotic stabilization of a 6-DOF rigid body by quaternion-based hybrid feedback **2009**,		12
149	A hybrid control framework for robust maneuver-based motion planning **2008**,		12
148	Distance function design and Lyapunov techniques for the stability of hybrid trajectories. *Automatica*, **2016**, 73, 38-46	5.7	11
147	Computationally aware control of autonomous vehicles: a hybrid model predictive control approach. *Autonomous Robots*, **2015**, 39, 503-517	3	11
146	Further results on synergistic Lyapunov functions and hybrid feedback design through backstepping **2011**,		11
145	A Hybrid Control Strategy for Robust Contact Detection and Force Regulation. *Proceedings of the American Control Conference*, **2007**,	1.2	11
144	A "Throw-and-Catch" Hybrid Control Strategy for Robust Global Stabilization of Nonlinear Systems. *Proceedings of the American Control Conference*, **2007**,	1.2	11
143	A Hybrid Adaptive Feedback Law for Robust Obstacle Avoidance and Coordination in Multiple Vehicle Systems **2018**,		11
142	Robust distributed synchronization of networked linear systems with intermittent information. *Automatica*, **2019**, 105, 323-333	5.7	10
141	Pointwise Asymptotic Stability in a Hybrid System and Well-Posed Behavior Beyond Zeno. *SIAM Journal on Control and Optimization*, **2018**, 56, 1358-1385	1.9	10
140	$mathcal {L}_2$ State Estimation With Guaranteed Convergence Speed in the Presence of Sporadic Measurements. *IEEE Transactions on Automatic Control*, **2019**, 64, 3362-3369	5.9	10
139	**2006**,		10
138	Hybrid Systems: Limit Sets and Zero Dynamics with a View Toward Output Regulation **2008**, 241-261		10
137	Robust global exponential stabilization on the n-dimensional sphere with applications to trajectory tracking for quadrotors. *Automatica*, **2019**, 110, 108534	5.7	9
136	A hybrid model predictive controller for path planning and path following **2015**,		9

135	Robust Stability of Hybrid Limit Cycles With Multiple Jumps in Hybrid Dynamical Systems. *IEEE Transactions on Automatic Control*, **2018**, 63, 1220-1226	5.9	9
134	Interconnected Observers for Robust Decentralized Estimation With Performance Guarantees and Optimized Connectivity Graph. *IEEE Transactions on Control of Network Systems*, **2016**, 3, 1-11	4	9
133	On minimum-time paths of bounded curvature with position-dependent constraints. *Automatica*, **2014**, 50, 537-546	5.7	9
132	Hybrid controllers for tracking of impulsive reference state trajectories **2011**,		9
131	A Hybrid Consensus Protocol for Pointwise Exponential Stability with Intermittent Information. *IFAC-PapersOnLine*, **2016**, 49, 146-151	0.7	9
130	Inter-event Times Analysis for Planar Linear Event-triggered Controlled Systems **2019**,		9
129	Finite time stability of sets for hybrid dynamical systems. *Automatica*, **2019**, 100, 200-211	5.7	9
128	Synergistic Lyapunov functions and backstepping hybrid feedbacks **2011**,		8
127	Nonlinear observer design with an appropriate Riemannian metric **2009**,		8
126	A Feedback Control Motivation for Generalized Solutions to Hybrid Systems. *Lecture Notes in Computer Science*, **2006**, 522-536	0.9	8
125	Suboptimality bounds for linear quadratic problems in hybrid linear systems **2013**,		8
124	**2016**,		8
123	Forward Invariance of Sets for Hybrid Dynamical Systems (Part I). *IEEE Transactions on Automatic Control*, **2019**, 64, 2426-2441	5.9	7
122	Basic properties and characterizations of incremental stability prioritizing flow time for a class of hybrid systems. *Systems and Control Letters*, **2016**, 90, 7-15	2.4	7
121	Results on incremental stability for a class of hybrid systems **2014**,		7
120	On notions and sufficient conditions for forward invariance of sets for hybrid dynamical systems **2015**,		7
119	A globally asymptotically stabilizing trajectory tracking controller for fully actuated rigid bodies using landmark-based information. *International Journal of Robust and Nonlinear Control*, **2015**, 25, 3617-3640	3.6	7
118	A robust hybrid control algorithm for a single-phase DC/AC inverter with variable input voltage **2014**,		7

117	On the Optimality of Dubins Paths across Heterogeneous Terrain. *Lecture Notes in Computer Science*, **2008**, 457-470	0.9	7
116	Results on finite time stability for a class of hybrid systems **2016**,		7
115	Robust Asymptotic Stability of Desynchronization in Impulse-Coupled Oscillators. *IEEE Transactions on Control of Network Systems*, **2016**, 3, 127-136	4	6
114	Dynamical properties of a two-gene network with hysteresis. *Information and Computation*, **2014**, 236, 102-121	0.8	6
113	Solution of a Riccati equation for the design of an observer contracting a Riemannian distance **2015** ,		6
112	Robust supervisory control for uniting two output-feedback hybrid controllers with different objectives. *Automatica*, **2013**, 49, 1958-1969	5.7	6
111	On the non-robustness of inconsistent quaternion-based attitude control systems using memoryless path-lifting schemes **2011**,		6
110	Robust Asymptotic Stabilization of Hybrid Systems using Control Lyapunov Functions **2016**,		6
109	Sufficient conditions for forward invariance and contractivity in hybrid inclusions using barrier functions. *Automatica*, **2021**, 124, 109328	5.7	6
108	Observers for Hybrid Dynamical Systems with Linear Maps and Known Jump Times **2018**,		6
107	Barrier Function Certificates for Forward Invariance in Hybrid Inclusions **2018**,		6
106	Computationally Aware Switching Criteria for Hybrid Model Predictive Control of Cyber-Physical Systems. *IEEE Transactions on Automation Science and Engineering*, **2016**, 13, 479-490	4.9	5
105	Convergence of Nonlinear Observers on ${mathbb{R}}^{n}$ With a Riemannian Metric (Part II). *IEEE Transactions on Automatic Control*, **2016**, 61, 2848-2860	5.9	5
104	Hybrid feedback for global asymptotic stabilization on a compact manifold **2017**,		5
103	Hybrid control strategy for robust global swing-up of the pendubot **2008**,		5
102	Rigid-Body Pose Hybrid Control Using Dual Quaternions: Global Asymptotic Stabilization and Robustness. *Journal of Guidance, Control, and Dynamics*, **2020**, 43, 1631-1641	2.1	5
101	A zero-crossing detection algorithm for robust simulation of hybrid systems jumping on surfaces. *Simulation Modelling Practice and Theory*, **2016**, 68, 1-17	3.9	5
100	Hybrid Control for Robust and Global Tracking on Smooth Manifolds. *IEEE Transactions on Automatic Control*, **2020**, 65, 1870-1885	5.9	5

99	Forward Invariance of Sets for Hybrid Dynamical Systems (Part II). *IEEE Transactions on Automatic Control*, **2021**, 66, 89-104	5.9	5
98	Hybrid Stabilization of Linear Systems With Reverse Polytopic Input Constraints. *IEEE Transactions on Automatic Control*, **2017**, 62, 6473-6480	5.9	4
97	On Robustness of Pre-Asymptotic Stability to Delayed Jumps in Hybrid Systems **2018**,		4
96	A hybrid predictive control algorithm for tracking in a single-phase DC/AC inverter **2017**,		4
95	Input-output triggered control using -stability over finite horizons. *International Journal of Robust and Nonlinear Control*, **2015**, 25, 2299-2327	3.6	4
94	Global exponential stabilization on the n-dimensional sphere **2015**,		4
93	On necessary and sufficient conditions for incremental stability of hybrid systems using the graphical distance between solutions **2015**,		4
92	A framework for modeling and analysis of dynamical properties of spiking neurons **2014**,		4
91	Passivity-based controllers for a class of hybrid systems with applications to mechanical systems interacting with their environment **2011**,		4
90	On the synchronization of two impulsive oscillators under communication constraints **2012**,		4
89	On robust, global stabilization of the attitude of an underactuated rigid body using hybrid feedback **2008**,		4
88	How well-posedness of hybrid systems can extend beyond Zeno times **2016**,		4
87	A Robust Hybrid Heavy Ball Algorithm for Optimization with High Performance **2019**,		4
86	Characterizations of safety in hybrid inclusions via barrier functions **2019**,		3
85	Analysis and design of event-triggered control algorithms using hybrid systems tools **2017**,		3
84	Results on stability and robustness of hybrid limit cycles for a class of hybrid systems **2015**,		3
83	Pointwise minimum norm control laws for hybrid systems **2013**,		3
82	Results on the asymptotic stability properties of desynchronization in impulse-coupled oscillators **2013**,		3

81	Robust global asymptotic attitude synchronization by hybrid control **2010**,		3
80	Uniting two output-feedback controllers with different objectives **2010**,		3
79	Control Lyapunov functions and stabilizability of compact sets for hybrid systems **2011**,		3
78	A nested Matrosov theorem for hybrid systems **2008**,		3
77	Hybrid MPC: Open-Minded but Not Easily Swayed **2007**, 17-34		3
76	Analysis and design of event-triggered control algorithms using hybrid systems tools. *International Journal of Robust and Nonlinear Control*, **2020**, 30, 5936-5965	3.6	3
75	Adaptive Backstepping of Synergistic Hybrid Feedbacks with Application to Obstacle Avoidance **2019**,		3
74	Robust Coordinated Hybrid Source Seeking with Obstacle Avoidance in Multi-Vehicle Autonomous Systems. *IEEE Transactions on Automatic Control*, **2021**, 1-1	5.9	3
73	A Model Predictive Control Framework for Hybrid Dynamical Systems. *IFAC-PapersOnLine*, **2018**, 51, 128-133	0.7	3
72	Robust Hybrid Global Asymptotic Stabilization of Rigid Body Dynamics using Dual Quaternions **2018**,		2
71	Model Predictive Control under Intermittent Measurements due to Computational Constraints: Feasibility, Stability, and Robustness **2018**,		2
70	Stealthy Attacks in Cloud-Connected Linear Impulsive Systems **2018**,		2
69	Robust Hybrid Kalman Filter for a Class of Nonlinear Systems **2018**,		2
68	A Hybrid Predictive Control Approach to Trajectory Tracking for a Fully Actuated Biped **2018**,		2
67	Robust distributed state observers with performance guarantees and optimized communication graph **2014**,		2
66	On asymptotic synchronization of interconnected hybrid systems with applications **2017**,		2
65	Existence of hybrid limit cycles and Zhukovskii stability in hybrid systems **2017**,		2
64	Invariance principles for switched Differential-Algebraic Equations under arbitrary and dwell-time switching **2015**,		2

63	Robust synchronization of two linear systems over intermittent communication networks **2015**,		2
62	A hybrid observer with a continuous intersample injection in the presence of sporadic measurements **2015**,		2
61	An invariance principle for differential-algebraic equations with jumps **2014**,		2
60	Sufficient conditions for passivity and stability of interconnections of hybrid systems using sums of storage functions **2014**,		2
59	**2013**,		2
58	Hybrid control of the boost converter: Robust global stabilization **2013**,		2
57	Tracking control for hybrid systems via embedding of known reference trajectories **2011**,		2
56	Analysis of hybrid systems resulting from relay-type hysteresis and saturation: A Lyapunov approach **2008**,		2
55	Zeroing Control Barrier Functions for Safe Volitional Pedaling in a Motorized Cycle. *IFAC-PapersOnLine*, **2020**, 53, 218-223	0.7	2
54	Control of Hybrid Systems: An Overview of Recent Advances145-178		2
53	On Distributed Observers for Linear Time-invariant Systems Under Intermittent Information Constraints. *IFAC-PapersOnLine*, **2016**, 49, 654-659	0.7	2
52	A Hybrid Control Strategy for Autonomous Navigation while Avoiding Multiple Obstacles at Unknown Locations **2019**,		2
51	A unifying convex analysis and switching system approach to consensus with undirected communication graphs. *Automatica*, **2020**, 111, 108598	5.7	2
50	Hybrid Regional Stabilization of Linear Systems with Actuator Saturation and Multi-Rate Samplers **2018**,		2
49	Applications of convex analysis to consensus algorithms, pointwise asymptotic stability, and its robustness **2018**,		2
48	Sufficient Conditions for Temporal Logic Specifications in Hybrid Dynamical Systems. *IFAC-PapersOnLine*, **2018**, 51, 97-102	0.7	2
47	On an invariance principle for differential-algebraic equations with jumps and its application to switched differential-algebraic equations. *Mathematics of Control, Signals, and Systems*, **2017**, 29, 1	1.3	1
46	Robust synchronization of interconnected linear systems over intermittent communication networks **2016**,		1

45	Autonomous Waypoint Transitioning and Loitering for UnmannedAerial Vehicles via Hybrid Control **2016**,		1
44	On the Optimality of Lyapunov-based Feedback Laws for Constrained Difference Inclusions **2018**,		1
43	Hybrid Feedback Control Methods for Robust and Global Power Conversion**This research has been partially supported by the National Science Foundation under CAREER Grant no. ECS-1450484 and by the Air Force Office of Scientific Research under YIP Grant no. FA9550-12-1-0366.. *IFAC-PapersOnLine*, **2015**, 48, 298-303	0.7	1
42	On robust forward invariance of sets for hybrid dynamical systems **2017**,		1
41	Hybrid attack monitor design to detect recurrent attacks in a class of cyber-physical systems **2017**,		1
40	Notions and a passivity tool for switched DAE systems **2017**,		1
39	Constructing distance functions and piecewise quadratic Lyapunov functions for stability of hybrid trajectories **2015**,		1
38	Observer-based control design for linear systems in the presence of limited measurement streams and intermittent input access **2015**,		1
37	A hybrid feedback controller for robust global trajectory tracking of quadrotor-like vehicles with minimized attitude error **2014**,		1
36	Switching System Model for Pinpoint Lunar Landing Guidance Using a Hybrid Control Strategy **2012** ,		1
35	Numerical Integration Scheme Using Singular Perturbation Method **2013**,		1
34	A landmark-based controller for global asymptotic stabilization on SE(3) **2012**,		1
33	A Technical Result for the Study of High-gain Observers with Sign-indefinite Gain Adaptation*. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2010**, 43, 284-289		1
32	On the Continuity of Asymptotically Stable Compact Sets for Simulations of Hybrid Systems **2006**,		1
31	Hybrid systems techniques for convergence of solutions to switching systems **2007**,		1
30	Encouraging Volitional Pedaling in Functional Electrical Stimulation-Assisted Cycling Using Barrier Functions.. *Frontiers in Robotics and AI*, **2021**, 8, 742986	2.8	1
29	Incremental Graphical Asymptotic Stability for Hybrid Dynamical Systems. *Lecture Notes in Control and Information Sciences*, **2017**, 231-262	0.5	1
28	HyNTP: An Adaptive Hybrid Network Time Protocol for Clock Synchronization in Heterogeneous Distributed Systems **2020**,		1

27	Adaptive Safety with Multiple Barrier Functions Using Integral Concurrent Learning **2021**,		1
26	Results on invariance-based feedback control for hybrid dynamical systems **2016**,		1
25	A computationally tractable implementation of pointwise minimum norm state-feedback laws for hybrid systems **2016**,		1
24	An Algorithm to Generate Solutions to Hybrid Dynamical Systems with Inputs **2019**,		1
23	Hybrid Model Predictive Control. *Control Engineering*, **2019**, 199-220	1	1
22	Hybrid Systems With Delayed Jumps: Asymptotic Stability via Robustness and Lyapunov Conditions. *IEEE Transactions on Automatic Control*, **2020**, 65, 3381-3396	5.9	1
21	Cost Evaluation for Hybrid Inclusions: A Lyapunov Approach **2018**,		1
20	Observer design for hybrid dynamical systems with approximately known jump times. *Automatica*, **2022**, 141, 110225	5.7	1
19	Linear temporal logic for hybrid dynamical systems: Characterizations and sufficient conditions. *Nonlinear Analysis: Hybrid Systems*, **2020**, 36, 100865	4.5	0
18	Explaining the mystery of periodicity in inter-transmission times in two-dimensional event-triggered controlled system. *IEEE Transactions on Automatic Control*, **2022**, 1-1	5.9	0
17	Hysteresis-based switching observers for linear systems using quadratic boundedness. *Automatica*, **2021**, 136, 109982	5.7	0
16	Hybrid dynamical systems with hybrid inputs: Definition of solutions and applications to interconnections. *International Journal of Robust and Nonlinear Control*, **2020**, 30, 5892-5916	3.6	0
15	Detectability and Invariance Properties for Set Dynamical Systems. *IFAC-PapersOnLine*, **2016**, 49, 1030-1035	0.7	0
14	Certifying Optimality in Hybrid Control Systems via Lyapunov-like Conditions. *IFAC-PapersOnLine*, **2019**, 52, 245-250	0.7	0
13	Hybrid Adaptive Control for the DC-DC Boost Converter. *IFAC-PapersOnLine*, **2021**, 54, 73-78	0.7	0
12	**2022**, 6, 415-420		0
11	A hybrid feedback control strategy for autonomous waypoint transitioning and loitering of unmanned aerial vehicles. *Nonlinear Analysis: Hybrid Systems*, **2017**, 26, 115-136	4.5	
10	On Robust Stability of Limit Cycles for Hybrid Systems With Multiple Jumps. *IFAC-PapersOnLine*, **2015**, 48, 199-204	0.7	

9	On the Converse Safety Problem for Differential Inclusions: Solutions, Regularity, and Time-Varying Barrier Functions. *IEEE Transactions on Automatic Control*, **2022**, 1-1	5.9
8	A Hybrid Control Algorithm for Gradient-Free Optimization using Conjugate Directions. *IFAC-PapersOnLine*, **2020**, 53, 5825-5830	0.7
7	Robust hybrid supervisory control for spacecraft close proximity missions. *Annual Reviews in Control*, **2021**, 52, 316-316	10.3
6	An Adaptive Hybrid Control Algorithm for Sender-Receiver Clock Synchronization. *IFAC-PapersOnLine*, **2020**, 53, 1906-1911	0.7
5	A Hybrid Model of a Genetic Regulatory Network in Mammalian Sclera. *Electronic Proceedings in Theoretical Computer Science, EPTCS*,125, 99-105	
4	Notions and Sufficient Conditions for Pointwise Asymptotic Stability in Hybrid Systems. *IFAC-PapersOnLine*, **2016**, 49, 140-145	0.7
3	Robust Hybrid Supervisory Control for a 3-DOF Spacecraft in Close-Proximity Operations. *IFAC-PapersOnLine*, **2018**, 51, 88-93	0.7
2	Hybrid Control for Autonomous Spacecraft Rendezvous Proximity Operations and Docking. *IFAC-PapersOnLine*, **2018**, 51, 94-99	0.7
1	State Estimation of Linear Systems over a Network subject to Sporadic Measurements, Delays, and Clock Mismatches. *IFAC-PapersOnLine*, **2018**, 51, 313-318	0.7