Rafael Vazquez

List of Publications by Year
in descending order

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122	2,692	218381	214527
papers	citations	26 h-index	47 g-index

125	125	125	962
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Local Exponential H^2 Stabilization of a $2imes2$ Quasilinear Hyperbolic System Using Backstepping. SIAM Journal on Control and Optimization, 2013, 51, 2005-2035.	1.1	257
2	Stabilization of a System of <formula formulatype="inline"> <tex Notation="TeX">$n+1$</tex></formula> Coupled First-Order Hyperbolic Linear PDEs With a Single Boundary Input. IEEE Transactions on Automatic Control, 2013, 58, 3097-3111.	3.6	220
3	Control of Homodirectional and General Heterodirectional Linear Coupled Hyperbolic PDEs. IEEE Transactions on Automatic Control, 2016, 61, 3301-3314.	3.6	213
4	Backstepping boundary stabilization and state estimation of a 2 × 2 linear hyperbolic system. , 2011, , .		169
5	Control of 1-D parabolic PDEs with Volterra nonlinearities, Part I: Design. Automatica, 2008, 44, 2778-2790.	3.0	118
6	Applying complexity science to air traffic management. Journal of Air Transport Management, 2015, 42, 149-158.	2.4	87
7	Multi-Agent Deployment in 3-D via PDE Control. IEEE Transactions on Automatic Control, 2015, 60, 891-906.	3.6	79
8	Boundary Control of Coupled Reaction-Advection-Diffusion Systems With Spatially-Varying Coefficients. IEEE Transactions on Automatic Control, 2017, 62, 2026-2033.	3.6	73
9	Chance-constrained model predictive control for spacecraft rendezvous with disturbance estimation. Control Engineering Practice, 2012, 20, 111-122.	3.2	68
10	Marcum -functions and explicit kernels for stabilization of linear hyperbolic systems with constant coefficients. Systems and Control Letters, 2014, 68, 33-42.	1.3	65
11	A Closed-Form Feedback Controller for Stabilization of the Linearized 2-D Navierâ€“Stokes Poiseuille System. IEEE Transactions on Automatic Control, 2007, 52, 2298-2312.	3.6	59
12	Control of 1D parabolic PDEs with Volterra nonlinearities, Part II: Analysis. Automatica, 2008, 44, 2791-2803.	3.0	57
13	Boundary Observer for Output-Feedback Stabilization of Thermal-Fluid Convection Loop. IEEE Transactions on Control Systems Technology, 2010, 18, 789-797.	3.2	48
14	An iterative model predictive control algorithm for UAV guidance. IEEE Transactions on Aerospace and Electronic Systems, 2015, 51, 2406-2419.	2.6	48
15	Boundary Exponential Stabilization of 1-Dimensional Inhomogeneous Quasi-Linear Hyperbolic Systems. SIAM Journal on Control and Optimization, 2019, 57, 963-998.	1.1	46
16	Nonlinear Stabilization of Shock-Like Unstable Equilibria in the Viscous Burgers PDE. IEEE Transactions on Automatic Control, 2008, 53, 1678-1683.	3.6	45
17	Stabilization of linearized 2D magnetohydrodynamic channel flow by backstepping boundary control. Systems and Control Letters, 2008, 57, 805-812.	1.3	43
18	Nonlinear Control of the Viscous Burgers Equation: Trajectory Generation, Tracking, and Observer Design. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2009, 131, .	0.9	39

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19	Adaptive Control for Aircraft Longitudinal Dynamics with Thrust Saturation. Journal of Guidance, Control, and Dynamics, 2015, 38, 651-661.	1.6	38
20	Prescribedâ€“time estimation and output regulation of the linearized SchrÃ¶dinger equation by backstepping. European Journal of Control, 2020, 55, 3-13.	1.6	38
21	Control for fast and stable Laminar-to-High-Reynolds-Numbers transfer in a 2D Navier-Stokes channel flow. Discrete and Continuous Dynamical Systems - Series B, 2008, 10, 925-956.	0.5	38
22	Chance-constrained Model Predictive Control for Near Rectilinear Halo Orbit spacecraft rendezvous. Aerospace Science and Technology, 2020, 100, 105827.	2.5	36
23	Control of the longitudinal flight dynamics of an UAV using adaptive backstepping. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 1892-1897.	0.4	35
24	Backstepping stabilization of a linearized ODEâ€“PDE Rijke tube model. Automatica, 2018, 96, 98-109.	3.0	35
25	Transfer Function Analysis of the Micro Cantilever Used in Atomic Force Microscopy. IEEE Nanotechnology Magazine, 2006, 5, 692-700.	1.1	32
26	Explicit integral operator feedback for local stabilization of nonlinear thermal convection loop PDEs. Systems and Control Letters, 2006, 55, 624-632.	1.3	32
27	Magnetohydrodynamic state estimation with boundary sensors. Automatica, 2008, 44, 2517-2527.	3.0	30
28	A Closed-Form Feedback Controller for Stabilization of Linearized Navier-Stokes Equations: The 2D Poisseuille Flow. , 0, , .		26
29	Pulse-width predictive control for LTV systems with application to spacecraft rendezvous. Control Engineering Practice, 2017, 60, 199-210.	3.2	24
30	Backstepping stabilization of an underactuated 3 × 3 linear hyperbolic system of fluid flow equations. , 2012, , .		23
31	Backstepping boundary control of Navier-Stokes channel flow: a 3D extension. , 2006, , .		22
32	Collocated output-feedback stabilization of a 2 × 2 quasilinear hyperbolic system using backstepping. , 2012, , .		22
33	Local exponential H² stabilization of a 2 × 2 quasilinear hyperbolic system using backstepping. , 2011, , .		21
34	Swath-acquisition planning in multiple-satellite missions: an exact and heuristic approach. IEEE Transactions on Aerospace and Electronic Systems, 2015, 51, 1717-1725.	2.6	21
35	Stochastic analysis of fuel consumption in aircraft cruise subject to along-track wind uncertainty. Aerospace Science and Technology, 2017, 66, 304-314.	2.5	21
36	Propagation of Initial Mass Uncertainty in Aircraft Cruise Flight. Journal of Guidance, Control, and Dynamics, 2013, 36, 415-429.	1.6	20

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37	Adaptive output feedback for hyperbolic PDE pairs with non-local coupling. , 2017, , .		19
38	Boundary control and estimation of reactionâ€“diffusion equations on the sphere under revolution symmetry conditions. International Journal of Control, 2019, 92, 2-11.	1.2	19
39	A Closed-Form Full-State Feedback Controller for Stabilization of 3D Magnetohydrodynamic Channel Flow. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2009, 131, .	0.9	18
40	Trajectory tracking for fixed-wing UAV using model predictive control and adaptive backstepping. IFAC-PapersOnLine, 2015, 48, 132-137.	0.5	18
41	Explicit output-feedback boundary control of reaction-diffusion PDEs on arbitrary-dimensional balls. ESAIM - Control, Optimisation and Calculus of Variations, 2016, 22, 1078-1096.	0.7	18
42	A flatness-based predictive controller for six-degrees of freedom spacecraft rendezvous. Acta Astronautica, 2020, 167, 391-403.	1.7	18
43	A Closed-Form Observer for the Channel Flow Navier-Stokes System. , 0, , .		17
44	Multimodal analysis of force spectroscopy based on a transfer function study of micro-cantilevers. Nanotechnology, 2007, 18, 185504.	1.3	16
45	Resolution of an Antennaâ€“Satellite assignment problem by means of Integer Linear Programming. Aerospace Science and Technology, 2014, 39, 567-574.	2.5	15
46	Bilateral boundary control of one-dimensional first- and second-order PDEs using infinite-dimensional backstepping. , 2016, , .		15
47	Trajectory Planning for Spacecraft Rendezvous with On/Off Thrusters*. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 8473-8478.	0.4	14
48	Model Predictive Control for Spacecraft Rendezvous in Elliptical Orbits with On/Off Thrustersâˆ—âˆ—The authors acknowledge financial support of the Spanish Ministry of Science and Innovation and of the European Commission for funding part of this work under grants DPI2008-05818 and EU NoE HYCON 2 (grant FP7-257462).. IFAC-PapersOnLine, 2015, 48, 251-256.	0.5	14
49	Boundary observers for coupled diffusionâ€“reaction systems with prescribed convergence rate. Systems and Control Letters, 2020, 135, 104586.	1.3	13
50	Boundary observer design for coupled reaction-diffusion systems with spatially-varying reaction. , 2017, , .		10
51	Folding Backstepping Approach to Parabolic PDE Bilateral Boundary Control. IFAC-PapersOnLine, 2019, 52, 76-81.	0.5	10
52	Nonlinear bilateral output-feedback control for a class of viscous Hamiltonâ€“Jacobi PDEs. Automatica, 2019, 101, 223-231.	3.0	10
53	Backstepping-Based Estimation of Thermoacoustic Oscillations in a Rijke Tube With Experimental Validation. IEEE Transactions on Automatic Control, 2020, 65, 5336-5343.	3.6	10
54	Volterra boundary control laws for a class of nonlinear parabolic partial differential equations. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2004, 37, 1253-1258.	0.4	9

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55	Boundary control of coupled reaction-diffusion systems with spatially-varying reaction. IFAC-PapersOnLine, 2016, 49, 222-227.	0.5	9
56	Stabilization of an underactuated coupled transport-wave PDE system. , 2017, , .		8
57	Orbit-Attitude Predictive Control in the Vicinity of Asteroids with In Situ Gravity Estimation. Journal of Guidance, Control, and Dynamics, 2022, 45, 262-279.	1.6	8
58	Marcum Q-functions and explicit feedback laws for stabilization of constant coefficient 2 × 2 linear hyperbolic systems. , 2013, , .		7
59	A backstepping boundary observer for a class of linear first-order hyperbolic systems. , 2013, , .		7
60	Trajectory Planning for Spacecraft Rendezvous in Elliptical Orbits with On/Off Thrusters. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 9703-9708.	0.4	7
61	Boundary control of a Rijke Tube using irrational transfer functions with experimental validation. IFAC-PapersOnLine, 2017, 50, 4528-4533.	0.5	7
62	Event-Based Impulsive Control for Spacecraft Rendezvous Hovering Phases. Journal of Guidance, Control, and Dynamics, 2021, 44, 1794-1810.	1.6	7
63	Explicit boundary control of reaction-diffusion PDEs on arbitrary-dimensional balls. , 2015, , .		6
64	Boundary control of a singular reaction-diffusion equation on a disk. IFAC-PapersOnLine, 2016, 49, 74-79.	0.5	6
65	Backstepping control design for a coupled hyperbolic-parabolic mixed class PDE system. , 2017, , .		6
66	Stabilization of a linear hyperbolic system with one boundary controlled transport PDE coupled with n counterconvecting PDEs. , 2012, , .		5
67	Explicit boundary control of a reaction-diffusion equation on a disk. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 1562-1567.	0.4	5
68	A Matlab Educational GUI for Analysis of GNSS Coverage and Precision. IFAC-PapersOnLine, 2015, 48, 93-98.	0.5	5
69	Prescribed-time stabilization of reaction-diffusion equation by output feedback. , 2019, , .		5
70	Transfer function analysis of a surface coupled atomic force microscope cantilever system. , 2006, , .		4
71	A Closed-Form Observer for the 3D Inductionless MHD and Navier-Stokes Channel Flow. , 2006, , .		4
72	BACKSTEPPING BOUNDARY CONTROL OF MAGNETOHYDRODYNAMIC CHANNEL FLOW. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 324-329.	0.4	4

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73	Explicit Output Feedback Stabilization of a Thermal Convection Loop by Continuous Backstepping and Singular Perturbations. Proceedings of the American Control Conference, 2007, , .	0.0	4
74	Nonlinear control of the Burgers PDE—Part II: Observer design, trajectory generation, and tracking. , 2008, , .		4
75	Output-feedback control of the longitudinal flight dynamics using adaptative backstepping. , 2011, , .		4
76	Boundary Feedback Control of Unstable thermoacoustic Oscillations in the Rijke Tube. IFAC-PapersOnLine, 2016, 49, 48-53.	0.5	4
77	Backstepping control of the Stefan problem with flowing liquid. , 2017, , .		4
78	Backstepping-based linear boundary observer for estimation of thermoacoustic instabilities in a Rijke tube. , 2018, , .		4
79	Stabilization of a 2-D reaction-diffusion equation with a coupled PDE evolving on its boundary. , 2019, , .		4
80	Delay robust control design of under-actuated PDE-ODE-PDE systems. , 2019, , .		4
81	Folding Bilateral Backstepping Output-Feedback Control Design for an Unstable Parabolic PDE. IEEE Transactions on Automatic Control, 2022, 67, 2389-2404.	3.6	4
82	Boundary Control of PDEs and Applications to Turbulent Flows and Flexible Structures. , 2006, , .		3
83	Stable Poiseuille flow transfer for a Navier-Stokes system. , 2006, , .		3
84	Backstepping Boundary Stabilization of Linearized 2D Hartman Flow. Proceedings of the American Control Conference, 2007, , .	0.0	3
85	Nonlinear control of the Burgers PDE—Part I: Full-state stabilization. , 2008, , .		3
86	Transfer Function Analysis of Atomic Force Microscope Cantilevers. , 2005, , 485.		2
87	Infinite-dimensional backstepping and applications to flows in electromagnetic fields. , 2008, , .		2
88	An operational calculus framework to characterize droplet size populations from turbulent breakup by a small number of parameters. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 185501.	0.7	2
89	Increasing Predictability and Performance in UAS Flight Contingencies using AIDL and MPC. , 2018, , .		2
90	A Predictive Guidance Algorithm for Autonomous Asteroid Soft Landing. IFAC-PapersOnLine, 2018, 51, 6-11.	0.5	2

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91	An Event-Triggered Predictive Controller for Spacecraft Rendezvous Hovering Phases. IFAC-PapersOnLine, 2019, 52, 97-102.	0.5	2
92	A differential-delay estimator for thermoacoustic oscillations in a Rijke tube using in-domain pressure measurements. , 2020, , .		2
93	Output Feedback Control of Radially-Dependent Reaction-Diffusion PDEs on Balls of Arbitrary Dimensions. IFAC-PapersOnLine, 2020, 53, 7635-7640.	0.5	2
94	Sensing schemes for state estimation in turbulent flows and flexible structures. , 2006, , .		1
95	Control of Channel Flow Turbulence, Vortex Shedding, and Thermal Convection by Backstepping Boundary Control. Proceedings of the American Control Conference, 2007, , .	0.0	1
96	BOUNDARY CONTROL LAWS FOR PARABOLIC PDES WITH VOLTERRA NONLINEARITIESâ€"PART I: DESIGN. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 146-151.	0.4	1
97	A High-level model predictive control guidance law for unmanned aerial vehicles. , 2015, , .		1
98	Adaptive output feedback control of flow-induced vibrations of a membrane at high mach numbers. , 2017, , .		1
99	Nonlinear Bilateral Full-State Feedback Trajectory Tracking for a Class of Viscous Hamilton-Jacobi PDEs. , 2018, , .		1
100	A Flatness-Based Trajectory Planning Algorithm for Rendezvous of Single-Thruster Spacecraft. IFAC-PapersOnLine, 2018, 51, 118-123.	0.5	1
101	Thermal convection loop control by continuous backstepping and singular perturbations. , 0, , .		0
102	Decoupling and Stabilizing Orr-Sommerfeld and Squire Systems by Boundary Control. , 2006, , .		0
103	Backstepping Boundary Control of Navier-Stokes Channel Flow: Explicit Gain Formulae in 3D. , 2006, , .		0
104	Higher Order Stability Properties of a 2D Navier Stokes System with an Explicit Boundary Controller. , 2006, , .		0
105	NONLINEAR CONTROL OF PDES: ARE FEEDBACK LINEARIZATION AND GEOMETRIC METHODS APPLICABLE?. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 20-27.	0.4	0
106	BOUNDARY CONTROL LAWS FOR PARABOLIC PDES WITH VOLTERRA NONLINEARITIESâ€"PART II: EXAMPLES. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 330-335.	0.4	0
107	Boundary control for nonlinear parabolic PDEs by Volterra feedback linearization. , 2007, , .		0
108	Propagation of Initial Mass Uncertainty in Aircraft Cruise Flight. , 2011, , .		0

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109	Design and implementation of a backstepping controller for regulating temperature in 3D printers based on selective laser sintering. , 2019, , .		0
110	Prescribedâ€“time stabilization of the linearized SchrÃ¶dinger equation. , 2020, , .		0
111	A closed-form feedback controller for stabilization of magnetohydrodynamic channel flow. , 2007, , .		0
112	Backstepping Controllers for Stabilization of Turbulent Flow PDEs. Automation and Control Engineering, 2007, , 439-460.	0.1	0
113	A Backstepping-based observer for estimation of thermoacoustic oscillations in a Rijke tube with in-domain measurements. IFAC-PapersOnLine, 2020, 53, 7521-7526.	0.5	0
114	Implementation in MATLAB of a Multiplicative Extended Kalman Filter for live estimation of a smart deviceâ€™s attitude. IFAC-PapersOnLine, 2021, 54, 43-48.	0.5	0
115	Backstepping control of mixed hyperbolic-parabolic PDE system with multiple coupling terms. , 2021, , .		0
116	Thermal-Fluid Convection Loop: Boundary Stabilization. , 2008, , 39-54.		0
117	Thermal-Fluid Convection Loop: Boundary Estimation and Output-Feedback Stabilization. , 2008, , 55-70.		0
118	2D Navierâ€“Stokes Channel Flow: Boundary Stabilization. , 2008, , 71-102.		0
119	2D Navierâ€“Stokes Channel Flow: Boundary Estimation. , 2008, , 103-114.		0
120	3D Magnetohydrodynamic Channel Flow: Boundary Stabilization. , 2008, , 115-133.		0
121	3D Magnetohydrodynamic Channel Flow: Boundary Estimation. , 2008, , 135-151.		0
122	2D Navierâ€“Stokes Channel Flow: Stable Flow Transfer. , 2008, , 153-196.		0