Rafael Vazquez

List of Publications by Year
in descending order

122 papers	2,692 citations	218381 26 h-index	214527 47 g-index
125 all docs	125 docs citations	125 times ranked	962 citing authors

#	Article	IF	Citations
1	Folding Bilateral Backstepping Output-Feedback Control Design for an Unstable Parabolic PDE. IEEE Transactions on Automatic Control, 2022, 67, 2389-2404.	3.6	4
2	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
3	Event-Based Impulsive Control for Spacecraft Rendezvous Hovering Phases. Journal of Guidance, Control, and Dynamics, 2021, 44, 1794-1810.	1.6	7
4	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
5	Backstepping control of mixed hyperbolic-parabolic PDE system with multiple coupling terms. , 2021, , .		0
6	Boundary observers for coupled diffusionâ€“reaction systems with prescribed convergence rate. Systems and Control Letters, 2020, 135, 104586.	1.3	13
7	A flatness-based predictive controller for six-degrees of freedom spacecraft rendezvous. Acta Astronautica, 2020, 167, 391-403.	1.7	18
8	Prescribedâ€“time stabilization of the linearized SchrÃ¶dinger equation. , 2020, , .		0
9	Chance-constrained Model Predictive Control for Near Rectilinear Halo Orbit spacecraft rendezvous. Aerospace Science and Technology, 2020, 100, 105827.	2.5	36
10	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
11	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
12	A differential-delay estimator for thermoacoustic oscillations in a Rijke tube using in-domain pressure measurements. , 2020, , .		2
13	Output Feedback Control of Radially-Dependent Reaction-Diffusion PDEs on Balls of Arbitrary Dimensions. IFAC-PapersOnLine, 2020, 53, 7635-7640.	0.5	2
14	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
15	Folding Backstepping Approach to Parabolic PDE Bilateral Boundary Control. IFAC-PapersOnLine, 2019, 52, 76-81.	0.5	10
16	Boundary Exponential Stabilization of 1-Dimensional Inhomogeneous Quasi-Linear Hyperbolic Systems. SIAM Journal on Control and Optimization, 2019, 57, 963-998.	1.1	46
17	Stabilization of a 2-D reaction-diffusion equation with a coupled PDE evolving on its boundary. , 2019, , .		4
18	Design and implementation of a backstepping controller for regulating temperature in 3D printers based on selective laser sintering. , 2019, , .		0

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19	An Event-Triggered Predictive Controller for Spacecraft Rendezvous Hovering Phases. IFAC-PapersOnLine, 2019, 52, 97-102.	0.5	2
20	Delay robust control design of under-actuated PDE-ODE-PDE systems. , 2019, , .		4
21	Prescribed-time stabilization of reaction-diffusion equation by output feedback. , 2019, , .		5
22	Nonlinear bilateral output-feedback control for a class of viscous Hamiltonâ€“Jacobi PDEs. Automatica, 2019, 101, 223-231.	3.0	10
23	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
24	Increasing Predictability and Performance in UAS Flight Contingencies using AIDL and MPC. , 2018, , .		2
25	Backstepping-based linear boundary observer for estimation of thermoacoustic instabilities in a Rijke tube. , 2018, , .		4
26	Nonlinear Bilateral Full-State Feedback Trajectory Tracking for a Class of Viscous Hamilton-Jacobi PDEs. , 2018, , .		1
27	A Flatness-Based Trajectory Planning Algorithm for Rendezvous of Single-Thruster Spacecraft. IFAC-PapersOnLine, 2018, 51, 118-123.	0.5	1
28	A Predictive Guidance Algorithm for Autonomous Asteroid Soft Landing. IFAC-PapersOnLine, 2018, 51, 6-11.	0.5	2
29	Backstepping stabilization of a linearized ODEâ€“PDE Rijke tube model. Automatica, 2018, 96, 98-109.	3.0	35
30	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
31	Adaptive output feedback for hyperbolic PDE pairs with non-local coupling. , 2017, , .		19
32	Boundary observer design for coupled reaction-diffusion systems with spatially-varying reaction. , 2017, , .		10
33	Stabilization of an underactuated coupled transport-wave PDE system. , 2017, , .		8
34	Backstepping control of the Stefan problem with flowing liquid. , 2017, , .		4
35	Pulse-width predictive control for LTV systems with application to spacecraft rendezvous. Control Engineering Practice, 2017, 60, 199-210.	3.2	24
36	Boundary Control of Coupled Reaction-Advection-Diffusion Systems With Spatially-Varying Coefficients. IEEE Transactions on Automatic Control, 2017, 62, 2026-2033.	3.6	73

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37	Backstepping control design for a coupled hyperbolic-parabolic mixed class PDE system. , 2017, , .		6
38	Boundary control of a Rijke Tube using irrational transfer functions with experimental validation. IFAC-PapersOnLine, 2017, 50, 4528-4533.	0.5	7
39	Adaptive output feedback control of flow-induced vibrations of a membrane at high mach numbers. , 2017, , .		1
40	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
41	Bilateral boundary control of one-dimensional first- and second-order PDEs using infinite-dimensional backstepping. , 2016, , .		15
42	Boundary control of a singular reaction-diffusion equation on a disk. IFAC-PapersOnLine, 2016, 49, 74-79.	0.5	6
43	Boundary Feedback Control of Unstable thermoacoustic Oscillations in the Rijke Tube. IFAC-PapersOnLine, 2016, 49, 48-53.	0.5	4
44	Boundary control of coupled reaction-diffusion systems with spatially-varying reaction. IFAC-PapersOnLine, 2016, 49, 222-227.	0.5	9
45	Control of Homodirectional and General Heterodirectional Linear Coupled Hyperbolic PDEs. IEEE Transactions on Automatic Control, 2016, 61, 3301-3314.	3.6	213
46	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
47	Explicit boundary control of reaction-diffusion PDEs on arbitrary-dimensional balls. , 2015, , .		6
48	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
49	A Matlab Educational GUI for Analysis of GNSS Coverage and Precision. IFAC-PapersOnLine, 2015, 48, 93-98.	0.5	5
50	A High-level model predictive control guidance law for unmanned aerial vehicles. , 2015, , .		1
51	Adaptive Control for Aircraft Longitudinal Dynamics with Thrust Saturation. Journal of Guidance, Control, and Dynamics, 2015, 38, 651-661.	1.6	38
52	Multi-Agent Deployment in 3-D via PDE Control. IEEE Transactions on Automatic Control, 2015, 60, 891-906.	3.6	79
53	Trajectory tracking for fixed-wing UAV using model predictive control and adaptive backstepping. IFAC-PapersOnLine, 2015, 48, 132-137.	0.5	18
54	An iterative model predictive control algorithm for UAV guidance. IEEE Transactions on Aerospace and Electronic Systems, 2015, 51, 2406-2419.	2.6	48

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55	Applying complexity science to air traffic management. Journal of Air Transport Management, 2015, 42, 149-158.	2.4	87
56	Resolution of an Antennaâ€“Satellite assignment problem by means of Integer Linear Programming. Aerospace Science and Technology, 2014, 39, 567-574.	2.5	15
57	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
58	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
59	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
60	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
61	Propagation of Initial Mass Uncertainty in Aircraft Cruise Flight. Journal of Guidance, Control, and Dynamics, 2013, 36, 415-429.	1.6	20
62	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
63	Marcum Q-functions and explicit feedback laws for stabilization of constant coefficient 2 × 2 linear hyperbolic systems. , 2013, , .		7
64	A backstepping boundary observer for a class of linear first-order hyperbolic systems. , 2013, , .		7
65	Stabilization of a linear hyperbolic system with one boundary controlled transport PDE coupled with n counterconvecting PDEs. , 2012, , .		5
66	Backstepping stabilization of an underactuated 3 × 3 linear hyperbolic system of fluid flow equations. , 2012, , .		23
67	Collocated output-feedback stabilization of a 2 × 2 quasilinear hyperbolic system using backstepping. , 2012, , .		22
68	Chance-constrained model predictive control for spacecraft rendezvous with disturbance estimation. Control Engineering Practice, 2012, 20, 111-122.	3.2	68
69	Propagation of Initial Mass Uncertainty in Aircraft Cruise Flight. , 2011, , .		0
70	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
71	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
72	Local exponential H² stabilization of a 2 × 2 quasilinear hyperbolic system using backstepping. , 2011, , .		21

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73	Backstepping boundary stabilization and state estimation of a 2 × 2 linear hyperbolic system. , 2011, , .		169
74	Output-feedback control of the longitudinal flight dynamics using adaptative backstepping. , 2011, , .		4
75	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
76	Boundary Observer for Output-Feedback Stabilization of Thermal-Fluid Convection Loop. IEEE Transactions on Control Systems Technology, 2010, 18, 789-797.	3.2	48
77	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
78	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
79	Magnetohydrodynamic state estimation with boundary sensors. Automatica, 2008, 44, 2517-2527.	3.0	30
80	Control of 1D parabolic PDEs with Volterra nonlinearities, Part II: Analysis. Automatica, 2008, 44, 2791-2803.	3.0	57
81	Control of 1-D parabolic PDEs with Volterra nonlinearities, Part I: Design. Automatica, 2008, 44, 2778-2790.	3.0	118
82	Stabilization of linearized 2D magnetohydrodynamic channel flow by backstepping boundary control. Systems and Control Letters, 2008, 57, 805-812.	1.3	43
83	Infinite-dimensional backstepping and applications to flows in electromagnetic fields. , 2008, , .		2
84	Nonlinear control of the Burgers PDE—Part I: Full-state stabilization. , 2008, , .		3
85	Nonlinear Stabilization of Shock-Like Unstable Equilibria in the Viscous Burgers PDE. IEEE Transactions on Automatic Control, 2008, 53, 1678-1683.	3.6	45
86	Nonlinear control of the Burgers PDE—Part II: Observer design, trajectory generation, and tracking. , 2008, , .		4
87	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
88	Thermal-Fluid Convection Loop: Boundary Stabilization. , 2008, , 39-54.		0
89	Thermal-Fluid Convection Loop: Boundary Estimation and Output-Feedback Stabilization. , 2008, , 55-70.		0
90	2D Navierâ€“Stokes Channel Flow: Boundary Stabilization. , 2008, , 71-102.		0

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91	2D Navierâ€“Stokes Channel Flow: Boundary Estimation. , 2008, , 103-114.		0
92	3D Magnetohydrodynamic Channel Flow: Boundary Stabilization. , 2008, , 115-133.		0
93	3D Magnetohydrodynamic Channel Flow: Boundary Estimation. , 2008, , 135-151.		0
94	2D Navierâ€“Stokes Channel Flow: Stable Flow Transfer. , 2008, , 153-196.		0
95	Backstepping Boundary Stabilization of Linearized 2D Hartman Flow. Proceedings of the American Control Conference, 2007, , .	0.0	3
96	Multimodal analysis of force spectroscopy based on a transfer function study of micro-cantilevers. Nanotechnology, 2007, 18, 185504.	1.3	16
97	Control of Channel Flow Turbulence, Vortex Shedding, and Thermal Convection by Backstepping Boundary Control. Proceedings of the American Control Conference, 2007, , .	0.0	1
98	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
99	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
100	BACKSTEPPING BOUNDARY CONTROL OF MAGNETOHYDRODYNAMIC CHANNEL FLOW. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 324-329.	0.4	4
101	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
102	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
103	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
104	Boundary control for nonlinear parabolic PDEs by Volterra feedback linearization. , 2007, , .		0
105	A closed-form feedback controller for stabilization of magnetohydrodynamic channel flow. , 2007, , .		0
106	Backstepping Controllers for Stabilization of Turbulent Flow PDEs. Automation and Control Engineering, 2007, , 439-460.	0.1	0
107	Decoupling and Stabilizing Orr-Sommerfeld and Squire Systems by Boundary Control. , 2006, , .		0
108	Transfer function analysis of a surface coupled atomic force microscope cantilever system. , 2006, , .		4

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109	Transfer Function Analysis of the Micro Cantilever Used in Atomic Force Microscopy. IEEE Nanotechnology Magazine, 2006, 5, 692-700.	1.1	32
110	Boundary Control of PDEs and Applications to Turbulent Flows and Flexible Structures. , 2006, , .		3
111	Sensing schemes for state estimation in turbulent flows and flexible structures. , 2006, , .		1
112	Explicit integral operator feedback for local stabilization of nonlinear thermal convection loop PDEs. Systems and Control Letters, 2006, 55, 624-632.	1.3	32
113	Stable Poiseuille flow transfer for a Navier-Stokes system. , 2006, , .		3
114	A Closed-Form Observer for the 3D Inductionless MHD and Navier-Stokes Channel Flow. , 2006, , .		4
115	Backstepping boundary control of Navier-Stokes channel flow: a 3D extension. , 2006, , .		22
116	Backstepping Boundary Control of Navier-Stokes Channel Flow: Explicit Gain Formulae in 3D. , 2006, , .		0
117	Higher Order Stability Properties of a 2D Navier Stokes System with an Explicit Boundary Controller. , 2006, , .		0
118	Transfer Function Analysis of Atomic Force Microscope Cantilevers. , 2005, , 485.		2
119	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
120	A Closed-Form Observer for the Channel Flow Navier-Stokes System. , 0, , .		17
121	A Closed-Form Feedback Controller for Stabilization of Linearized Navier-Stokes Equations: The 2D Poisseuille Flow. , 0, , .		26
122	Thermal convection loop control by continuous backstepping and singular perturbations. , 0, , .		0