

# Blas M B Vinagre Jara

## List of Publications by Year in descending order

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116  
papers

6,739  
citations

201575

27  
h-index

95218

68  
g-index

121  
all docs

121  
docs citations

121  
times ranked

3130  
citing authors

#	ARTICLE	IF	CITATIONS
1	Fractional-order Systems and Controls. Advances in Industrial Control, 2010, , .	0.4	1,547
2	Tuning and auto-tuning of fractional order controllers for industry applications. Control Engineering Practice, 2008, 16, 798-812.	3.2	832
3	Analogue Realizations of Fractional-Order Controllers. Nonlinear Dynamics, 2002, 29, 281-296.	2.7	484
4	Matrix approach to discrete fractional calculus II: Partial fractional differential equations. Journal of Computational Physics, 2009, 228, 3137-3153.	1.9	368
5	A new IIR-type digital fractional order differentiator. Signal Processing, 2003, 83, 2359-2365.	2.1	325
6	Two direct Tustin discretization methods for fractional-order differentiator/integrator. Journal of the Franklin Institute, 2003, 340, 349-362.	1.9	320
7	Continued Fraction Expansion Approaches to Discretizing Fractional Order Derivatives?an Expository Review. Nonlinear Dynamics, 2004, 38, 155-170.	2.7	287
8	Fractional order control strategies for power electronic buck converters. Signal Processing, 2006, 86, 2803-2819.	2.1	255
9	On Fractional PI? Controllers: Some Tuning Rules for Robustness to Plant Uncertainties. Nonlinear Dynamics, 2004, 38, 369-381.	2.7	225
10	Title is missing!. Nonlinear Dynamics, 2002, 29, 269-279.	2.7	207
11	Fractional PID Controllers for Industry Application. A Brief Introduction. JVC/Journal of Vibration and Control, 2007, 13, 1419-1429.	1.5	158
12	Analysis of the Van der Pol Oscillator Containing Derivatives of Fractional Order. JVC/Journal of Vibration and Control, 2007, 13, 1291-1301.	1.5	139
13	Linear fractional order controllers; A survey in the frequency domain. Annual Reviews in Control, 2019, 47, 51-70.	4.4	118
14	Tip position control of a lightweight flexible manipulator using a fractional order controller. IET Control Theory and Applications, 2007, 1, 1451-1460.	1.2	97
15	On Fractional PID Controllers: A Frequency Domain Approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2000, 33, 51-56.	0.4	85
16	Fractional Order Disturbance Observer for Robust Vibration Suppression. Nonlinear Dynamics, 2004, 38, 355-367.	2.7	70
17	Improved fractional Kalman filter and its application to estimation over lossy networks. Signal Processing, 2011, 91, 542-552.	2.1	67
18	A Fractional Adaptation Scheme for Lateral Control of an AGV. JVC/Journal of Vibration and Control, 2008, 14, 1499-1511.	1.5	62

#	ARTICLE	IF	CITATIONS
19	Experimental Application of Hybrid Fractional-Order Adaptive Cruise Control at Low Speed. IEEE Transactions on Control Systems Technology, 2014, 22, 2329-2336.	3.2	56
20	Fractional-order reset control: Application to a servomotor. Mechatronics, 2013, 23, 781-788.	2.0	55
21	Optimal Fractional Controllers for Rational Order Systems: A Special Case of the Wiener-Hopf Spectral Factorization Method. IEEE Transactions on Automatic Control, 2007, 52, 2385-2389.	3.6	51
22	Matrix approach to discrete fractional calculus III: non-equidistant grids, variable step length and distributed orders. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120153.	1.6	49
23	Back to Basics: Meaning of the Parameters of Fractional Order PID Controllers. Mathematics, 2019, 7, 530.	1.1	46
24	IIR approximations to the fractional differentiator/integrator using Chebyshev polynomials theory. ISA Transactions, 2013, 52, 461-468.	3.1	43
25	Stability of fractional order switching systems. Computers and Mathematics With Applications, 2013, 66, 585-596.	1.4	38
26	Stable force control and contact transition of a single link flexible robot using a fractional-order controller. ISA Transactions, 2019, 89, 139-157.	3.1	34
27	The fractional order lead compensator. , 0, , .		30
28	A ROBUST TUNING METHOD FOR FRACTIONAL ORDER PI CONTROLLERS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 22-27.	0.4	29
29	A New Discretization Method for Fractional Order Differentiators via Continued Fraction Expansion. , 2003, , 761.		28
30	Arbitrary real-order cost functions for signals and systems. Signal Processing, 2011, 91, 372-378.	2.1	27
31	Tuning of Fractional PID Controllers by Using QFT. , 2006, , .		25
32	Fractional-Order Generalized Predictive Control: Application for Low-Speed Control of Gasoline-Propelled Cars. Mathematical Problems in Engineering, 2013, 2013, 1-10.	0.6	24
33	Using Fractional Calculus for Lateral and Longitudinal Control of Autonomous Vehicles. Lecture Notes in Computer Science, 2003, , 337-348.	1.0	22
34	Clavile&#x00F1;o: Evolution of an autonomous car. , 2010, , .		22
35	Stability of linear time invariant systems with interval fractional orders and interval coefficients. , 0, , .		21
36	Fractional-Order Generalized Predictive Control: Formulation and some properties. , 2010, , .		21

#	ARTICLE	IF	CITATIONS
37	Low-cost Hardware-in-the-loop Testbed of a Mobile Robot to Support Learning in Automatic Control and Robotics**This work has been supported by the Spanish Ministry of Economy and Competitiveness under the project DPI2012-37062-C02-02 and the Junta de Extremadura under the Ayuda a Grupos with reference GR15178.. IFAC-PapersOnLine, 2016, 49, 242-247.	0.5	21
38	Boolean-based fractional order SMC for switching systems: application to a DC-DC buck converter. Signal, Image and Video Processing, 2012, 6, 445-451.	1.7	20
39	Adaptive gain-order fractional control for network-based applications. Fractional Calculus and Applied Analysis, 2014, 17, 462-482.	1.2	20
40	Fractional Network-Based Control for Vehicle Speed Adaptation via Vehicle-to-Infrastructure Communications. IEEE Transactions on Control Systems Technology, 2013, 21, 780-790.	3.2	17
41	Infinite horizon state-feedback LQR controller for fractional systems. , 2010, , .		16
42	A General Form for Reset Control Including Fractional Order Dynamics. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2014, 47, 2028-2033.	0.4	16
43	Microelectronic Implementations of Fractional-Order Integrodifferential Operators. Journal of Computational and Nonlinear Dynamics, 2008, 3, .	0.7	15
44	Can Cybernetics and Fractional Calculus Be Partners?: Searching for New Ways to Solve Complex Problems. IEEE Systems, Man, and Cybernetics Magazine, 2018, 4, 23-28.	1.2	15
45	Frequency domain identification of a flexible structure with piezoelectric actuators using irrational transfer function models. , 0, , .		14
46	Low Speed Control of an Autonomous Vehicle by Using a Fractional PI Controller. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 15025-15030.	0.4	14
47	Chaos in fractional and integer order NSG systems. Signal Processing, 2015, 107, 302-311.	2.1	14
48	A method for the design of robust controllers ensuring the quadratic stability for switching systems. JVC/Journal of Vibration and Control, 2014, 20, 1085-1098.	1.5	13
49	Relaxation modulus in the fitting of polycarbonate and poly(vinyl chloride) viscoelastic polymers by a fractional Maxwell model. Colloid and Polymer Science, 2002, 280, 485-489.	1.0	12
50	On Fractional Order Disturbance Observer. , 2003, , 617.		12
51	Low speed control of an autonomous vehicle using a hybrid fractional order controller. , 2011, , .		11
52	Multivariable fractional order PID controller design via LMI approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 13960-13965.	0.4	11
53	Efficient control of a SmartWheel via Internet with compensation of variable delays. Mechatronics, 2013, 23, 821-827.	2.0	10
54	Matrix approach to discretization of fractional derivatives and to solution of fractional differential equations and their systems. , 2009, , .		9

#	ARTICLE	IF	CITATIONS
55	A survey of Fractional-Order Generalized Predictive Control. , 2012, , .		9
56	Thereâ€™s Plenty of Fractional at the Bottom, I: Brownian Motors and Swimming Microrobots. Fractional Calculus and Applied Analysis, 2016, 19, 1282-1291.	1.2	9
57	Cardiovascular Circulatory System and Left Carotid Model: A Fractional Approach to Disease Modeling. Fractal and Fractional, 2022, 6, 64.	1.6	9
58	Comparison of controllers for a three-phase Phase Locked Loop system under distorted conditions. , 2009, , .		8
59	Auto-tuning of fractional order PI <sup>λ</sup> D <sup>α</sup> controllers using a PLC. , 2009, , .		8
60	Optimized fractional order conditional integrator. Journal of Process Control, 2011, 21, 960-966.	1.7	8
61	Physical Modeling based Simulators to Support Teaching in Automatic Control: the Rotatory Pendulum**This work has been supported by the Spanish Ministry of Economy and Competitiveness under the project DPI2012-37062-C02-02 and the Junta de Extremadura under the Ayuda a Grupos with Two Strategies for Fractional Sliding Mode Control of Integer Order Systems by System	0.5	7
62	Augmentation: Application to a Servomotor * *This work has been partially supported by the FEDER Funds (Programa Operativo FEDER de Extremadura 2014-2020) through the grant "Ayuda a Grupos de Investigaci3n" (ref. GR15178) of the Junta de Extremadura and by the Spanish Ministry of Economy and Competitiveness under the project with reference DPI2016-80547-R.. IFAC-PapersOnLine, 2017, 50, 8103-8108.	0.5	7
63	Effects of a communication network on the longitudinal and lateral control of an AGV. , 2008, , .		6
64	GPC strategies for the lateral control of a networked AGV. , 2009, , .		6
65	DEALING WITH FRACTIONAL DYNAMICS OF IP NETWORK DELAYS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2012, 22, 1250089.	0.7	6
66	EXPERIENCES ON AN INTERNET LINK CHARACTERIZATION AND NETWORKED CONTROL OF A SMART WHEEL. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2012, 22, 1230015.	0.7	6
67	Basic properties and stability of fractional-order reset control systems. , 2013, , .		6
68	SISTEMA DE ASISTENCIA A LA CONDUCCI3N BASADO EN UNA RED DE COMUNICACI3N DE BAJO COSTE.. Dyna (Spain), 2010, 85, 245-254.	0.1	6
69	Matrix Approach to Discretization of Ordinary and Partial Differential Equations of Arbitrary Real Order: The Matlab Toolbox. , 2009, , .		5
70	Fractional-Order PID. Advances in Industrial Control, 2012, , 465-493.	0.4	5
71	Modeling and Control of IPMC-Based Artificial Eukaryotic Flagellum Swimming Robot: Distributed Actuation. Algorithms, 2022, 15, 181.	1.2	5
72	Fractional-order Control of a Flexible Manipulator. , 2007, , 449-462.		4

#	ARTICLE	IF	CITATIONS
73	Bounded control strategies for minimizing the effects of the communications network on the lateral control of an AGV. , 2008, , .		4
74	Fully Automated Tuning and Implementation of Fractional PID Controllers. , 2009, , .		4
75	Fractional Gain Scheduled Controller for a Networked Smart Wheel: Experimental Results. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2011, 44, 15043-15048.	0.4	4
76	Iterative Learning and Fractional Reset Control. , 2015, , .		4
77	A comparative study of planar waveforms for propulsion of a joined artificial bacterial flagella swimming robot. , 2017, , .		4
78	Improved Locomotion of an AEF Swimming Robot Using Fractional Order Control. , 2019, , .		4
79	Fractional Order PID Control with Rate-limited Anti-windup for the Pitch System of Wind Turbines. , 2020, , .		4
80	Effects of Introducing Fractional Dynamics in Hill's Model for Muscle Contraction. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 1743-1748.	0.4	3
81	Performance study of propulsion of N-link artificial Eukaryotic flagellum swimming microrobot within a fractional order approach: From simulations to hardware-in-the-loop experiments. European Journal of Control, 2021, 58, 340-356.	1.6	3
82	Fractional controller for guidance of autonomous ground vehicles. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 87-90.	0.4	2
83	Fractional Control of a Single-Link Flexible Manipulator. , 2005, , 1563.		2
84	Controller for urban intersections based on hybrid automaton. , 2010, , .		2
85	Discrete Fractional Calculus: Non-Equidistant Grids and Variable Step Length. , 2011, , .		2
86	Hybrid Modeling and Fractional Control of a SCKAFO Orthosis for Gait Assistance. , 2011, , .		2
87	Hybrid systems and control with fractional dynamics (II): Control. , 2014, , .		2
88	Hybrid systems and control with fractional dynamics (I): Modeling and analysis. , 2014, , .		2
89	Comparing Classical and Fractional Order Control Strategies of a Cardiovascular Circulatory System Simulator. IFAC-PapersOnLine, 2018, 51, 48-53.	0.5	2
90	Testing non reciprocal motion of a swimming flexible small robot with single actuation. , 2018, , .		2

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91	A fractional model reference adaptive system. A method of adjusting the parameters controller. Journal European Des Systemes Automatises, 2008, 42, 977-998.	0.3	2
92	Cooperative Maneuver Study Between Autonomous Cars: Overtaking. Lecture Notes in Computer Science, 2007, , 1151-1158.	1.0	2
93	Vibration Suppression Controller for a Flexible Beam on a Cart Using SMC. Advances in Intelligent Systems and Computing, 2014, , 127-139.	0.5	2
94	Microelectronic Implementations of Fractional Order Integro-Differential Operators. , 2007, , 1267.		1
95	A proposal for optimal tuning of fractional order proportional integral-proportional derivative PI <sup>λ</sup> -PD <sup>μ</sup> controllers. , 2009, , .		1
96	Comparing Generalized Order PID Controllers for Networked Control Systems With Random Delays and Data Dropouts. , 2009, , .		1
97	Fractional Approach for Estimating Sap Velocity in Trees. Fractional Calculus and Applied Analysis, 2015, 18, 479-494.	1.2	1
98	Frequency Domain Based Fractional Order Modeling of IPMC Actuators for Control. , 2019, , .		1
99	Fractional modeling of flexural behavior of toenail plates: First step for clinical purposes. Medical Engineering and Physics, 2021, 90, 23-32.	0.8	1
100	Purcell's Three-Link Swimmer: Assessment of Geometry and Gaits for Optimal Displacement and Efficiency. Mathematics, 2021, 9, 1088.	1.1	1
101	CONTROLLER DESIGN FOR A STANCE-CONTROL KNEE-ANKLE-FOOT ORTHOSIS BASED ON OPTIMIZATION TECHNIQUES. , 2012, , .		1
102	PI vs Fractional PI for the Control of a Shunt Active Power Filter. , 2007, , .		1
103	Position and Velocity Control of a Servo by Using GPC of Arbitrary Real Order. , 2010, , 369-376.		1
104	PHYSICAL MODELING BASED SIMULATORS TO SUPPORT LABORATORY LEARNING IN AUTOMATIC CONTROL AND ROBOTICS. , 2016, , .		1
105	Modelling Cardiovascular Diseases with Fractional-Order Derivatives. Lecture Notes in Networks and Systems, 2022, , 52-57.	0.5	1
106	Optimal fractional controllers for commensurate order systems: A special case of the Wiener-Hopf method. , 0, , .		0
107	Optimized fractional order conditional integrator. , 2010, , .		0
108	Fractional order hybrid systems and their stability. , 2013, , .		0

#	ARTICLE	IF	CITATIONS
109	Fractional models for measuring sap velocities in trees. , 2014, , .		0
110	Fractional disturbance observer for vibration suppression of a beam-cart system. , 2014, , .		0
111	Loop transfer recovery for fractional order control systems. First results. , 2016, , .		0
112	Nonlinear control methods. , 2019, , 1-28.		0
113	Modeling Mechanical Impedance of Environment in Flexible Robotics Applications. , 2019, , .		0
114	VIRTUAL LABORATORIES TO SUPPORT LEARNING IN INTRODUCTORY AUTOMATIC CONTROL COURSES: THE UNIVERSITY OF EXTREMADURA PILOT EXPERIENCE. , 2016, , .		0
115	Evaluating an AEF Swimming Microrobot Using a Hardware-in-the-loop Testbed. Advances in Intelligent Systems and Computing, 2020, , 524-536.	0.5	0
116	Purcell's three-link microswimmer based on IPMC: Simulations in COMSOL Multiphysics. IEEE Latin America Transactions, 2022, 20, 474-480.	1.2	0