Bernard Brogliato

List of Publications by Year
in descending order

80 papers	3,738 citations	136950 32 h-index	128289 60 g-index
81 all docs	81 docs citations	81 times ranked	1819 citing authors

#	Article	IF	Citations
1	Upgrading a linear controller to a sliding mode one: Theory and experiments. Control Engineering Practice, 2022, 123, 105107.	5.5	6
2	Dissipative Dynamical Systems With Set-Valued Feedback Loops: Well-Posed Set-Valued Lur'e Dynamical Systems. IEEE Control Systems, 2022, 42, 93-114.	0.8	0
3	Digital implementation of sliding‑mode control via the implicit method: A tutorial. International Journal of Robust and Nonlinear Control, 2021, 31, 3528-3586.	3.7	39
4	Time‑discretizations of differentiators: Design of implicit algorithms and comparative analysis. International Journal of Robust and Nonlinear Control, 2021, 31, 7679-7723.	3.7	30
5	Lyapunov Stability Analysis of the Implicit Discrete-Time Twisting Control Algorithm. IEEE Transactions on Automatic Control, 2020, 65, 2619-2626.	5.7	28
6	Dissipative Systems Analysis and Control. Communications and Control Engineering, 2020, , .	1.6	43
7	Positive Real Systems. Communications and Control Engineering, 2020, , 9-79.	1.6	3
8	Kalman‑Yakubovich‑Popov Lemma. Communications and Control Engineering, 2020, , 81-261.	1.6	0
9	Dissipative Physical Systems. Communications and Control Engineering, 2020, , 429-490.	1.6	1
10	Passivity-Based Control. Communications and Control Engineering, 2020, , 491-573.	1.6	1
11	A Direct Proof of the Equivalence of Side Conditions for Strictly Positive Real Matrix Transfer Functions. IEEE Transactions on Automatic Control, 2020, 65, 450-452.	5.7	4
12	The Implicit Discretization of the Supertwisting Sliding-Mode Control Algorithm. IEEE Transactions on Automatic Control, 2020, 65, 3707-3713.	5.7	66
13	Quadratic Optimal Control of Linear Complementarity Systems: First-Order Necessary Conditions and Numerical Analysis. IEEE Transactions on Automatic Control, 2020, 65, 2743-2750.	5.7	10
14	The contact problem in Lagrangian systems with redundant frictional bilateral and unilateral constraints and singular mass matrix. The all-sticking contacts problem. Multibody System Dynamics, 2020, 48, 151-192.	2.7	5
15	Kuwabara-Kono numerical dissipation: a new method to simulate granular matter. IMA Journal of Applied Mathematics, 2020, 85, 27-66.	1.6	6
16	Dynamical Systems Coupled with Monotone Set-Valued Operators: Formalisms, Applications, Well-Posedness, and Stability. SIAM Review, 2020, 62, 3-129.	9.5	76
17	Continuous and discrete-time stability of a robust set-valued nested controller. Automatica, 2019, 107, 406-417.	5.0	8
18	Influence of imperfect joints and geometrical tolerances on a circuit breaker dynamics. Mechanisms and Machine Science, 2019, , 3069-3078.	0.5	0

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19	Consistent Discretization of Finite-Time and Fixed-Time Stable Systems. SIAM Journal on Control and Optimization, 2019, 57, 78-103.	2.1	70
20	Well-Posedness and Output Regulation for Implicit Time-Varying Evolution Variational Inequalities. SIAM Journal on Control and Optimization, 2018, 56, 751-781.	2.1	24
21	Feedback control of multibody systems with joint clearance and dynamic backlash: a tutorial. Multibody System Dynamics, 2018, 42, 283-315.	2.7	16
22	Multibody systems with 3D revolute joints with clearances: an industrial case study with an experimental validation. Multibody System Dynamics, 2018, 42, 249-282.	2.7	43
23	Set-Valued Sliding-Mode Control of Uncertain Linear Systems: Continuous and Discrete-Time Analysis. SIAM Journal on Control and Optimization, 2018, 56, 1756-1793.	2.1	25
24	Non-autonomous higher-order Moreau's sweeping process: Well-posedness, stability and Zeno trajectories. European Journal of Applied Mathematics, 2018, 29, 941-968.	2.9	4
25	Errata to â€œMultivalued Robust Tracking Control of Lagrange Systems: Continuous and Discrete-Time Algorithmsâ€•[Sep 17 4436-4450]. IEEE Transactions on Automatic Control, 2018, 63, 2750-2750.	5.7	2
26	Comparisons of Multiple-Impact Laws For Multibody Systems: Moreauâ€™s Law, Binary Impacts, and the LZB Approach. , 2018, , 1-45.		7
27	3D Revolute Joint with Clearance in Multibody Systems. Mechanisms and Machine Science, 2018, , 11-18.	0.5	11
28	A new representation of systems with frictional unilateral constraints and its Baumgarte-like relaxation. Multibody System Dynamics, 2017, 39, 267-290.	2.7	19
29	Multivalued Robust Tracking Control of Lagrange Systems: Continuous and Discrete-Time Algorithms. IEEE Transactions on Automatic Control, 2017, 62, 4436-4450.	5.7	39
30	Comparison of several formulations and integration methods for the resolution of DAEs formulations in event-driven simulation of nonsmooth frictionless multibody dynamics. Multibody System Dynamics, 2017, 41, 201-231.	2.7	8
31	Nonsmooth Mechanics. Communications and Control Engineering, 2016, , .	1.6	144
32	Analysis of collocated feedback controllers for four-bar planar mechanisms with joint clearances. Multibody System Dynamics, 2016, 38, 101-136.	2.7	14
33	The contact problem in Lagrangian systems subject to bilateral and unilateral constraints, with or without sliding Coulombâ€™s friction: a tutorial. Multibody System Dynamics, 2016, 38, 43-76.	2.7	31
34	Lyapunov Stability and Performance Analysis of the Implicit Discrete Sliding Mode Control. IEEE Transactions on Automatic Control, 2016, 61, 3016-3030.	5.7	85
35	Implicit discrete-time twisting controller without numerical chattering: Analysis and experimental results. Control Engineering Practice, 2016, 46, 129-141.	5.5	55
36	Observer Design for Unilaterally Constrained Lagrangian Systems: A Passivity-Based Approach. IEEE Transactions on Automatic Control, 2016, 61, 2386-2401.	5.7	20

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37	Comments on "Chattering-Free Digital Sliding-Mode Control With State Observer and Disturbance Rejection". IEEE Transactions on Automatic Control, 2016, 61, 3707-3707.	5.7	5
38	Globally stable implicit Euler time-discretization of a nonlinear single-input sliding-mode control system. , 2015, , .		17
39	Asymptotic analysis of Painlevé's paradox. Multibody System Dynamics, 2015, 35, 299-319.	2.7	13
40	Experimental Comparisons Between Implicit and Explicit Implementations of Discrete-Time Sliding Mode Controllers: Toward Input and Output Chattering Suppression. IEEE Transactions on Control Systems Technology, 2015, 23, 2071-2075.	5.2	41
41	Stability notions for a class of nonlinear systems with measure controls. Mathematics of Control, Signals, and Systems, 2015, 27, 245-275.	2.3	12
42	Singular mass matrix and redundant constraints in unilaterally constrained Lagrangian and Hamiltonian systems. Multibody System Dynamics, 2015, 35, 39-61.	2.7	9
43	Stability and Observer Design for Lur'e Systems with Multivalued, Nonmonotone, Time-Varying Nonlinearities and State Jumps. SIAM Journal on Control and Optimization, 2014, 52, 3639-3672.	2.1	41
44	Enhanced matching perturbation attenuation with discrete-time implementations of sliding-mode controllers. , 2014, , .		5
45	Numerical simulation of piecewise-linear models of gene regulatory networks using complementarity systems. Physica D: Nonlinear Phenomena, 2014, 269, 103-119.	2.8	32
46	Dynamics of planar rocking-blocks with Coulomb friction and unilateral constraints: comparisons between experimental and numerical data. Multibody System Dynamics, 2014, 32, 1-25.	2.7	41
47	Kinetic quasi-velocities in unilaterally constrained Lagrangian mechanics with impacts and friction. Multibody System Dynamics, 2014, 32, 175-216.	2.7	23
48	On preserving dissipativity properties of linear complementarity dynamical systems with the θ $_{\theta}$-method. Numerische Mathematik, 2013, 125, 601-637.	1.9	12
49	Inertial couplings between unilateral and bilateral holonomic constraints in frictionless Lagrangian systems. Multibody System Dynamics, 2013, 29, 289-325.	2.7	14
50	Well-Posedness, Robustness, and Stability Analysis of a Set-Valued Controller for Lagrangian Systems. SIAM Journal on Control and Optimization, 2013, 51, 1592-1614.	2.1	13
51	Study of the Planar Rocking-Block Dynamics With Coulomb Friction: Critical Kinetic Angles. Journal of Computational and Nonlinear Dynamics, 2013, 8, .	1.2	8
52	Impact–contact dynamics in a disc–ball system. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120741.	2.1	14
53	Chattering-Free Digital Sliding-Mode Control With State Observer and Disturbance Rejection. IEEE Transactions on Automatic Control, 2012, 57, 1087-1101.	5.7	173
54	Switching, relay and complementarity systems: A tutorial on their well-posedness and relationships. Physica D: Nonlinear Phenomena, 2012, 241, 1985-2002.	2.8	17

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55	Shock dynamics in granular chains: numerical simulations and comparison with experimental tests. Granular Matter, 2012, 14, 341-362.	2.2	20
56	Analysis of a generalized kinematic impact law for multibody-multicontact systems, with application to the planar rocking block and chains of balls. Multibody System Dynamics, 2012, 27, 351-382.	2.7	29
57	Nonsmooth Modeling and Simulation for Switched Circuits. Lecture Notes in Electrical Engineering, 2011, , .	0.4	64
58	Well-posedness, stability and invariance results for a class of multivalued Lurâ€™e dynamical systems. Nonlinear Analysis: Theory, Methods & Applications, 2011, 74, 195-212.	1.1	56
59	Passivity-based switching control of flexible-joint complementarity mechanical systems. Automatica, 2010, 46, 160-166.	5.0	27
60	Implicit Euler numerical scheme and chattering-free implementation of sliding mode systems. Systems and Control Letters, 2010, 59, 284-293.	2.3	151
61	Time-Stepping Numerical Simulation of Switched Circuits Within the Nonsmooth Dynamical Systems Approach. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2010, 29, 1042-1055.	2.7	32
62	Trajectory Tracking Control of Multiconstraint Complementarity Lagrangian Systems. IEEE Transactions on Automatic Control, 2010, 55, 1300-1313.	5.7	61
63	Planar dynamics of a rigid body system with frictional impacts. II. Qualitative analysis and numerical simulations. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 2267-2292.	2.1	31
64	Frictionless multiple impacts in multibody systems. II. Numerical algorithm and simulation results. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 1-23.	2.1	45
65	Some results on optimal control with unilateral state constraints. Nonlinear Analysis: Theory, Methods & Applications, 2009, 70, 3626-3657.	1.1	7
66	Observer Design for Lur'e Systems With Multivalued Mappings: A Passivity Approach. IEEE Transactions on Automatic Control, 2009, 54, 1996-2001.	5.7	70
67	Higher order Moreauâ€™s sweeping process: mathematical formulation and numerical simulation. Mathematical Programming, 2008, 113, 133-217.	2.4	38
68	Frictionless multiple impacts in multibody systems. I. Theoretical framework. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2008, 464, 3193-3211.	2.1	68
69	Energy dissipation and dispersion effects in granular media. Physical Review E, 2008, 78, 031307.	2.1	44
70	Numerical Methods for Nonsmooth Dynamical Systems. Lecture Notes in Applied and Computational Mechanics, 2008, , .	2.2	346
71	On the controllability of linear juggling mechanical systems. Systems and Control Letters, 2006, 55, 350-367.	2.3	16
72	Necessary conditions of asymptotic stability for unilateral dynamical systems. Nonlinear Analysis: Theory, Methods & Applications, 2005, 61, 961-1004.	1.1	17

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73	Some results on the controllability of planar variational inequalities. Systems and Control Letters, 2005, 54, 65-71.	2.3	17
74	The Krakovskii-LaSalle Invariance Principle for a Class of Unilateral Dynamical Systems. Mathematics of Control, Signals, and Systems, 2005, 17, 57-76.	2.3	35
75	TRACKING CONTROL OF COMPLEMENTARITY LAGRANGIAN SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2005, 15, 1839-1866.	1.7	36
76	Absolute stability and the Lagrange–Dirichlet theorem with monotone multivalued mappings. Systems and Control Letters, 2004, 51, 343-353.	2.3	105
77	Modeling, stability and control of biped robots—a general framework. Automatica, 2004, 40, 1647-1664.	5.0	199
78	Analysis of Proportional-Derivative and Nonlinear Control of Mechanical Systems with Dynamic Backlash. JVC/Journal of Vibration and Control, 2003, 9, 119-155.	2.6	10
79	Direct adaptive control design for one-degree-of-freedom complementary-slackness jugglers. Automatica, 2001, 37, 1117-1123.	5.0	23
80	Nonsmooth Mechanics. Communications and Control Engineering, 1999, , .	1.6	423