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	Nonsmooth Mechanics. Communications and Control Engineering, 1999, , .	1.6	423
2	Numerical Methods for Nonsmooth Dynamical Systems. Lecture Notes in Applied and Computational Mechanics, 2008, , .	2.2	346
3	Modeling, stability and control of biped robotsâ€"a general framework. Automatica, 2004, 40, 1647-1664.	5.0	199
4	Chattering-Free Digital Sliding-Mode Control With State Observer and Disturbance Rejection. IEEE Transactions on Automatic Control, 2012, 57, 1087-1101.	5.7	173
5	Implicit Euler numerical scheme and chattering-free implementation of sliding mode systems. Systems and Control Letters, 2010, 59, 284-293.	2.3	151
6	Nonsmooth Mechanics. Communications and Control Engineering, 2016, , .	1.6	144
7	Absolute stability and the Lagrangeâ€"Dirichlet theorem with monotone multivalued mappings. Systems and Control Letters, 2004, 51, 343-353.	2.3	105
8	Lyapunov Stability and Performance Analysis of the Implicit Discrete Sliding Mode Control. IEEE Transactions on Automatic Control, 2016, 61, 3016-3030.	5.7	85
9	Dynamical Systems Coupled with Monotone Set-Valued Operators: Formalisms, Applications, Well-Posedness, and Stability. SIAM Review, 2020, 62, 3-129.	9.5	76
10	Observer Design for Lur'e Systems With Multivalued Mappings: A Passivity Approach. IEEE Transactions on Automatic Control, 2009, 54, 1996-2001.	5.7	70
11	Consistent Discretization of Finite-Time and Fixed-Time Stable Systems. SIAM Journal on Control and Optimization, 2019, 57, 78-103.	2.1	70
12	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
13	The Implicit Discretization of the Supertwisting Sliding-Mode Control Algorithm. IEEE Transactions on Automatic Control, 2020, 65, 3707-3713.	5.7	66
14	Nonsmooth Modeling and Simulation for Switched Circuits. Lecture Notes in Electrical Engineering, 2011, , .	0.4	64
15	Trajectory Tracking Control of Multiconstraint Complementarity Lagrangian Systems. IEEE Transactions on Automatic Control, 2010, 55, 1300-1313.	5.7	61
16	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
17	Implicit discrete-time twisting controller without numerical chattering: Analysis and experimental results. Control Engineering Practice, 2016, 46, 129-141.	5.5	55
18	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

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19	Energy dissipation and dispersion effects in granular media. Physical Review E, 2008, 78, 031307.	2.1	44
20	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
21	Dissipative Systems Analysis and Control. Communications and Control Engineering, 2020, , .	1.6	43
22	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
23	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
24	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
25	Multivalued Robust Tracking Control of Lagrange Systems: Continuous and Discrete-Time Algorithms. IEEE Transactions on Automatic Control, 2017, 62, 4436-4450.	5.7	39
26	Digital implementation of slidingâ€mode control via the implicit method: A tutorial. International Journal of Robust and Nonlinear Control, 2021, 31, 3528-3586.	3.7	39
27	Higher order Moreauâ€™s sweeping process: mathematical formulation and numerical simulation. Mathematical Programming, 2008, 113, 133-217.	2.4	38
28	TRACKING CONTROL OF COMPLEMENTARITY LAGRANGIAN SYSTEMS. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 2005, 15, 1839-1866.	1.7	36
29	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
30	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
31	Numerical simulation of piecewise-linear models of gene regulatory networks using complementarity systems. Physica D: Nonlinear Phenomena, 2014, 269, 103-119.	2.8	32
32	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
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	Timeâ€discretizations of differentiators: Design of implicit algorithms and comparative analysis. International Journal of Robust and Nonlinear Control, 2021, 31, 7679-7723.	3.7	30
35	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
36	Lyapunov Stability Analysis of the Implicit Discrete-Time Twisting Control Algorithm. IEEE Transactions on Automatic Control, 2020, 65, 2619-2626.	5.7	28

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37	Passivity-based switching control of flexible-joint complementarity mechanical systems. Automatica, 2010, 46, 160-166.	5.0	27
38	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
39	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
40	Direct adaptive control design for one-degree-of-freedom complementary-slackness jugglers. Automatica, 2001, 37, 1117-1123.	5.0	23
41	Kinetic quasi-velocities in unilaterally constrained Lagrangian mechanics with impacts and friction. Multibody System Dynamics, 2014, 32, 175-216.	2.7	23
42	Shock dynamics in granular chains: numerical simulations and comparison with experimental tests. Granular Matter, 2012, 14, 341-362.	2.2	20
43	Observer Design for Unilaterally Constrained Lagrangian Systems: A Passivity-Based Approach. IEEE Transactions on Automatic Control, 2016, 61, 2386-2401.	5.7	20
44	A new representation of systems with frictional unilateral constraints and its Baumgarte-like relaxation. Multibody System Dynamics, 2017, 39, 267-290.	2.7	19
45	Necessary conditions of asymptotic stability for unilateral dynamical systems. Nonlinear Analysis: Theory, Methods & Applications, 2005, 61, 961-1004.	1.1	17
46	Some results on the controllability of planar variational inequalities. Systems and Control Letters, 2005, 54, 65-71.	2.3	17
47	Switching, relay and complementarity systems: A tutorial on their well-posedness and relationships. Physica D: Nonlinear Phenomena, 2012, 241, 1985-2002.	2.8	17
48	Globally stable implicit Euler time-discretization of a nonlinear single-input sliding-mode control system. , 2015, , .		17
49	On the controllability of linear juggling mechanical systems. Systems and Control Letters, 2006, 55, 350-367.	2.3	16
50	Feedback control of multibody systems with joint clearance and dynamic backlash: a tutorial. Multibody System Dynamics, 2018, 42, 283-315.	2.7	16
51	Inertial couplings between unilateral and bilateral holonomic constraints in frictionless Lagrangian systems. Multibody System Dynamics, 2013, 29, 289-325.	2.7	14
52	Impactâ€“contact dynamics in aÂdiscâ€“ball system. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120741.	2.1	14
53	Analysis of collocated feedback controllers for four-bar planar mechanisms with joint clearances. Multibody System Dynamics, 2016, 38, 101-136.	2.7	14
54	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

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55	Asymptotic analysis of PainlevÃ©â€™s paradox. Multibody System Dynamics, 2015, 35, 299-319.	2.7	13
56	On preserving dissipativity properties of linear complementarity dynamical systems with the $$heta $$ Î¸-method. Numerische Mathematik, 2013, 125, 601-637.	1.9	12
57	Stability notions for a class of nonlinear systems with measure controls. Mathematics of Control, Signals, and Systems, 2015, 27, 245-275.	2.3	12
58	3D Revolute Joint with Clearance in Multibody Systems. Mechanisms and Machine Science, 2018, , 11-18.	0.5	11
59	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
60	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
61	Singular mass matrix and redundant constraints in unilaterally constrained Lagrangian and Hamiltonian systems. Multibody System Dynamics, 2015, 35, 39-61.	2.7	9
62	Study of the Planar Rocking-Block Dynamics With Coulomb Friction: Critical Kinetic Angles. Journal of Computational and Nonlinear Dynamics, 2013, 8, .	1.2	8
63	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
64	Continuous and discrete-time stability of a robust set-valued nested controller. Automatica, 2019, 107, 406-417.	5.0	8
65	Some results on optimal control with unilateral state constraints. Nonlinear Analysis: Theory, Methods & Applications, 2009, 70, 3626-3657.	1.1	7
66	Comparisons of Multiple-Impact Laws For Multibody Systems: Moreauâ€™s Law, Binary Impacts, and the LZB Approach. , 2018, , 1-45.		7
67	Kuwabara-Kono numerical dissipation: a new method to simulate granular matter. IMA Journal of Applied Mathematics, 2020, 85, 27-66.	1.6	6
68	Upgrading a linear controller to a sliding mode one: Theory and experiments. Control Engineering Practice, 2022, 123, 105107.	5.5	6
69	Enhanced matching perturbation attenuation with discrete-time implementations of sliding-mode controllers. , 2014, , .		5
70	Comments on â€œChattering-Free Digital Sliding-Mode Control With State Observer and Disturbance Rejectionâ€• IEEE Transactions on Automatic Control, 2016, 61, 3707-3707.	5.7	5
71	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
72	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

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73	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
74	Positive Real Systems. Communications and Control Engineering, 2020, , 9-79.	1.6	3
75	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
76	Dissipative Physical Systems. Communications and Control Engineering, 2020, , 429-490.	1.6	1
77	Passivity-Based Control. Communications and Control Engineering, 2020, , 491-573.	1.6	1
78	Influence of imperfect joints and geometrical tolerances on a circuit breaker dynamics. Mechanisms and Machine Science, 2019, , 3069-3078.	0.5	0
79	Kalmanâ€“Yakubovichâ€“Popov Lemma. Communications and Control Engineering, 2020, , 81-261.	1.6	0
80	Dissipative Dynamical Systems With Set-Valued Feedback Loops: Well-Posed Set-Valued Lurâ€™e Dynamical Systems. IEEE Control Systems, 2022, 42, 93-114.	0.8	0