

Elio Usai

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

116
papers

4,308
citations

31
h-index

64
g-index

128
ext. papers

5,135
ext. citations

3.8
avg, IF

5.53
L-index

#	Paper	IF	Citations
116	Chattering avoidance by second-order sliding mode control. <i>IEEE Transactions on Automatic Control</i> , 1998 , 43, 241-246	5.9	745
115	A survey of applications of second-order sliding mode control to mechanical systems. <i>International Journal of Control</i> , 2003 , 76, 875-892	1.5	505
114	On multi-input chattering-free second-order sliding mode control. <i>IEEE Transactions on Automatic Control</i> , 2000 , 45, 1711-1717	5.9	248
113	Analysis of Chattering in Systems With Second-Order Sliding Modes. <i>IEEE Transactions on Automatic Control</i> , 2007 , 52, 2085-2102	5.9	209
112	On second order sliding mode controllers 1999 , 329-350		180
111	Output tracking control of uncertain nonlinear second-order systems. <i>Automatica</i> , 1997 , 33, 2203-2212	5.7	172
110	Second-order sliding-mode control of container cranes. <i>Automatica</i> , 2002 , 38, 1783-1790	5.7	168
109	Sliding mode control: A survey with applications in math. <i>Mathematics and Computers in Simulation</i> , 2011 , 81, 954-979	3.3	138
108	. <i>IEEE Transactions on Industrial Electronics</i> , 2008 , 55, 3846-3854	8.9	102
107	Sliding mode control approaches to the robust regulation of linear multivariable fractional-order dynamics. <i>International Journal of Robust and Nonlinear Control</i> , 2010 , 20, 2045-2056	3.6	100
106	Tracking Control of the Uncertain Heat and Wave Equation via Power-Fractional and Sliding-Mode Techniques. <i>SIAM Journal on Control and Optimization</i> , 2011 , 49, 363-382	1.9	97
105	Output-feedback control of an underwater vehicle prototype by higher-order sliding modes. <i>Automatica</i> , 2004 , 40, 1525-1531	5.7	86
104	. <i>IEEE Transactions on Industrial Electronics</i> , 2015 , 62, 5236-5246	8.9	78
103	Design of finite-time high-order sliding mode state observer: A practical insight to PEM fuel cell system. <i>Journal of Process Control</i> , 2014 , 24, 203-224	3.9	77
102	Robust Finite-Time Frequency and Voltage Restoration of Inverter-Based Microgrids via Sliding-Mode Cooperative Control. <i>IEEE Transactions on Industrial Electronics</i> , 2018 , 65, 907-917	8.9	67
101	Finite-Time Consensus With Disturbance Rejection by Discontinuous Local Interactions in Directed Graphs. <i>IEEE Transactions on Automatic Control</i> , 2015 , 60, 1133-1138	5.9	65
100	Properties of a combined adaptive/second-order sliding mode control algorithm for some classes of uncertain nonlinear systems. <i>IEEE Transactions on Automatic Control</i> , 2000 , 45, 1334-1341	5.9	61

99	On the convergence properties of a 2-sliding control algorithm for non-linear uncertain systems. <i>International Journal of Control</i> , 2001 , 74, 718-731	1.5	53
98	Finite-time converging jump observer for switched linear systems with unknown inputs. <i>Nonlinear Analysis: Hybrid Systems</i> , 2011 , 5, 174-188	4.5	50
97	Finite-time state observation for non-linear uncertain systems via higher-order sliding modes. <i>International Journal of Control</i> , 2009 , 82, 1564-1574	1.5	50
96	Digital second-order sliding mode control for uncertain nonlinear systems. <i>Automatica</i> , 2001 , 37, 1371-1377	3.7	47
95	Parameter tuning of second-order sliding mode controllers for linear plants with dynamic actuators. <i>Automatica</i> , 2006 , 42, 833-839	5.7	46
94	Consensus-Based Control for a Network of Diffusion PDEs With Boundary Local Interaction. <i>IEEE Transactions on Automatic Control</i> , 2016 , 61, 2708-2713	5.9	45
93	Robust speed and torque estimation in electrical drives by second-order sliding modes. <i>IEEE Transactions on Control Systems Technology</i> , 2003 , 11, 84-90	4.8	41
92	Receding Horizon Adaptive Second-Order Sliding Mode Control for Doubly-Fed Induction Generator Based Wind Turbine. <i>IEEE Transactions on Control Systems Technology</i> , 2017 , 25, 73-84	4.8	40
91	Finite-time consensus for switching network topologies with disturbances. <i>Nonlinear Analysis: Hybrid Systems</i> , 2013 , 10, 83-93	4.5	37
90	Global stabilization for nonlinear uncertain systems with unmodeled actuator dynamics. <i>IEEE Transactions on Automatic Control</i> , 2001 , 46, 1826-1832	5.9	37
89	Exponential Stabilization of the Uncertain Wave Equation via Distributed Dynamic Input Extension. <i>IEEE Transactions on Automatic Control</i> , 2011 , 56, 212-217	5.9	36
88	Contact force regulation in wire-actuated pantographs via variable structure control and frequency-domain techniques. <i>International Journal of Control</i> , 2008 , 81, 1747-1762	1.5	36
87	An improved second-order sliding-mode control scheme robust against the measurement noise. <i>IEEE Transactions on Automatic Control</i> , 2004 , 49, 1731-1736	5.9	36
86	Performance Analysis of Second-Order Sliding-Mode Control Systems With Fast Actuators. <i>IEEE Transactions on Automatic Control</i> , 2007 , 52, 1053-1059	5.9	31
85	Continuous state-feedback tracking of an uncertain heat diffusion process. <i>Systems and Control Letters</i> , 2010 , 59, 754-759	2.4	30
84	Globally convergent real-time differentiation via second order sliding modes. <i>International Journal of Systems Science</i> , 2007 , 38, 833-844	2.3	30
83	Enhancing the Efficiency and Lifetime of a Proton Exchange Membrane Fuel Cell Using Nonlinear Model-Predictive Control With Nonlinear Observation. <i>IEEE Transactions on Industrial Electronics</i> , 2017 , 64, 6649-6659	8.9	26
82	Higher-Order Sliding Modes for the Output-Feedback Control of Nonlinear Uncertain Systems 2002 , 83-108		26

81	Fault diagnosis for the vertical three-tank system via high-order sliding-mode observation. <i>Journal of the Franklin Institute</i> , 2010 , 347, 923-939	4	21
80	On the second-order sliding mode control of nonlinear systems with uncertain control direction. <i>Automatica</i> , 2009 , 45, 2982-2985	5.7	20
79	Output Feedback Regulation of the Contact-Force in High-Speed Train Pantographs. <i>Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME</i> , 2004 , 126, 82-87	1.6	20
78	Load swing suppression in the 3-dimensional overhead crane via second-order sliding-modes 2010 ,		19
77	On the Transfer Properties of the Generalized Sub-Optimal Second-Order Sliding Mode Control Algorithm. <i>IEEE Transactions on Automatic Control</i> , 2009 , 54, 399-403	5.9	19
76	Finite-time consensus for a network of perturbed double integrators by second-order sliding mode technique 2013 ,		18
75	Robust reconstruction of the discrete state for a class of nonlinear uncertain switched systems. <i>Nonlinear Analysis: Hybrid Systems</i> , 2011 , 5, 220-232	4.5	18
74	Analysis and shaping of the self-sustained oscillations in relay controlled fractional-order systems. <i>Fractional Calculus and Applied Analysis</i> , 2013 , 16,	2.7	17
73	Uniformly convergent sliding mode-based observation for switched linear systems. <i>International Journal of Robust and Nonlinear Control</i> , 2016 , 26, 1549-1564	3.6	16
72	Continuous and discrete state reconstruction for nonlinear switched systems via high-order sliding-mode observers. <i>International Journal of Systems Science</i> , 2011 , 42, 725-735	2.3	16
71	OUTPUT-FEEDBACK CONTROL OF CONTAINER CRANES: A COMPARATIVE ANALYSIS. <i>Asian Journal of Control</i> , 2008 , 5, 578-593	1.7	16
70	Nonlinear observation in fuel cell systems: A comparison between disturbance estimation and High-Order Sliding-Mode techniques. <i>International Journal of Hydrogen Energy</i> , 2016 , 41, 19737-19748	6.7	15
69	Recent advances in sliding-mode based consensus strategies 2014 ,		13
68	Control of oxygen excess ratio in a PEM fuel cell system using high-order sliding-mode controller and observer. <i>Turkish Journal of Electrical Engineering and Computer Sciences</i> , 2015 , 23, 255-278	0.9	13
67	Parameter tuning and chattering adjustment of Super-Twisting sliding mode control system for linear plants 2012 ,		12
66	Continuous finite-time stabilization for some classes of fractional order dynamics 2012 ,		12
65	Second-order sliding mode approaches to disturbance estimation and fault detection in fractional-order systems. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011 , 44, 2436-2441		12
64	On the Finite-Time Stabilization of Uncertain Nonlinear Systems With Relative Degree Three. <i>IEEE Transactions on Automatic Control</i> , 2007 , 52, 2134-2141	5.9	12

63	Discontinuous dynamical systems for fault detection. A unified approach including fractional and integer order dynamics. <i>Mathematics and Computers in Simulation</i> , 2014 , 95, 111-125	3.3	11
62	Decentralised state estimation for linear systems with unknown inputs: a consensus-based approach. <i>IET Control Theory and Applications</i> , 2011 , 5, 498-506	2.5	11
61	Contact force estimation and regulation in active pantographs: An algebraic observability approach. <i>Asian Journal of Control</i> , 2011 , 13, 761-772	1.7	11
60	Higher-Order Sliding Mode Approaches for Control and Estimation in Electrical Drives 423-445		11
59	. <i>IEEE Transactions on Circuits and Systems Part 1: Regular Papers</i> , 2002 , 49, 1000-1006		10
58	Boundary control and observer design for an uncertain wave process by second-order sliding-mode technique 2013 ,		8
57	Finite-time consensus with disturbance attenuation for directed switching network topologies by discontinuous local interactions 2013 ,		8
56	A chaotic modulation scheme based on algebraic observability and sliding mode differentiators. <i>Chaos, Solitons and Fractals</i> , 2005 , 26, 363-377	9.3	8
55	Variable structure control of nonlinear sampled data systems by second order sliding modes 1999 , 43-67		8
54	Compressor surge active control via throttle and CCV actuators. A second-order sliding-mode approach 2008 ,		7
53	Integral sliding modes for the robustification of consensus-based multi-agent based systems 2016 ,		7
52	Second order sliding mode approaches to fault detection and control of infinite dimensional systems 2014 ,		6
51	On the Lyapunov-based second-order SMC design for some classes of distributed parameter systems. <i>IMA Journal of Mathematical Control and Information</i> , 2012 , 29, 437-457	1.1	6
50	A combined first-/second-order sliding-mode technique in the control of a jet-propelled vehicle. <i>International Journal of Robust and Nonlinear Control</i> , 2008 , 18, 570-585	3.6	6
49	A discontinuous algorithm for distributed convex optimization 2016 ,		5
48	Robust FDI in induction motors via second order sliding mode technique 2012 ,		5
47	Chattering Elimination in the Hybrid Control of Constrained Manipulators via First/Second Order Sliding Mode Control. <i>Journal of Dynamical and Control Systems</i> , 1999 , 9, 99-124		5
46	Sliding Mode-Based Robustification of Consensus and Distributed Optimization Control Protocols. <i>IEEE Transactions on Automatic Control</i> , 2021 , 66, 1207-1214	5.9	5

45	Voltage Restoration of Islanded Microgrids via Cooperative Second-Order Sliding Mode Control. <i>IFAC-PapersOnLine</i> , 2017 , 50, 9637-9642	0.7	4
44	Unknown-input observation techniques for infiltration and water flow estimation in open-channel hydraulic systems. <i>Control Engineering Practice</i> , 2012 , 20, 1374-1384	3.9	4
43	Nonlinear Discrete-Time Algorithm for Fractional Derivatives Computation with Application to PID Controller Implementation. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2013 , 46, 887-892		4
42	Second-order sliding-mode control of the uncertain heat and wave equations 2010 ,		4
41	Chattering reduction and robust position control in induction motor with second-order VSS. <i>International Journal of Systems Science</i> , 1998 , 29, 1-12	2.3	4
40	Contact force regulation in wire-actuated pantographs via variable structure control 2007 ,		4
39	Contact Force Regulation in Wire-Actuated Pantographs 2008 , 447-463		4
38	Robust consensus-based secondary voltage restoration of inverter-based islanded microgrids with delayed communications 2018 ,		4
37	Simplex sliding mode control for autonomous six-DOF vehicles with mono-directional actuators: Robustness, stability, and implementation issues. <i>International Journal of Robust and Nonlinear Control</i> , 2019 , 29, 529-549	3.6	3
36	Time-based adaptive second order sliding mode controller for wind energy conversion optimization 2014 ,		3
35	Decentralized state estimation in connected systems* *The research leading to these results has received funding from the European Community's Seventh Framework Programme FP7/2007-2013 under Grant Agreement n°257462 [Research Project HYCON2-Network of excellence]. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2013 , 46, 421-426		3
34	Adaptive identification of the commensurate order in fractional processes by means of variable-order operators 2012 ,		3
33	On an output-feedback stabilization problem with uncertainty in the relative degree. <i>International Journal of Robust and Nonlinear Control</i> , 2008 , 18, 741-755	3.6	3
32	Consensus-based leader-follower tracking for a network of perturbed diffusion PDEs via local boundary interaction**The research leading to these results has received funding from the research project "Modeling, control and experimentation of innovative thermal storage systems", funded by Sardinia regional government under grant agreement n. CRP-66193. <i>IFAC PapersOnLine</i> ,	0.7	3
31	Robust Distributed Secondary Voltage Restoration Control of AC Microgrids under Multiple Communication Delays. <i>Energies</i> , 2021 , 14, 1165	3.1	3
30	Time-Optimal Stabilization for a Third-Order Integrator: a Robust State-Feedback Implementation 2002 , 131-144		3
29	Detection of rotor broken bar and eccentricity faults in induction motors via second order sliding mode observer 2012 ,		2
28	Consensus based decentralized estimation for linear plants with unknown inputs 2010 ,		2

27	Sliding-mode boundary control of uncertain reaction-diffusion processes with spatially varying parameters 2012 ,		2
26	Observation of a class of quasilinear systems by quasi-continuous high-order sliding modes 2008 ,		2
25	A Comprehensive Analysis of Chattering in Second Order Sliding Mode Control Systems 2008 , 23-49		2
24	Compressor Surge Suppression by Second-Order Sliding Mode Control Technique. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2008 , 41, 6238-6244		2
23	Robust near-optimal control via unchattering sliding mode control 1998 ,		2
22	Robust distributed consensus on the median value for networks of heterogeneously perturbed agents 2016 ,		2
21	Boundary control of coupled reaction-advection-diffusion equations having the same diffusivity parameter**The research leading to these results has received funding from the research project "Modeling, control and experimentation of innovative thermal storage systems", funded by Sardinia regional government under grant agreement n. CRP-60193. <i>IFAC-PapersOnLine</i> , 2016 , 49, 86-91	0.7	2
20	A new approach to causal output tracking for non-minimum phase nonlinear systems via combined first/second order sliding mode control 2013 ,		1
19	Frequency-domain analysis of self-excited oscillations for a class of multivariable relay systems 2013 ,		1
18	Distributed-parameter second-order sliding-mode control techniques for the uncertain heat and wave equations. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011 , 44, 762-767		1
17	Unknown-input observation techniques in Open Channel Hydraulic Systems. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2011 , 44, 1151-1156		1
16	Boundary second-order sliding-mode control of an uncertain heat process with spatially varying diffusivity 2011 ,		1
15	Finite-Time Consensus based Clock Synchronization by Discontinuous Control. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2012 , 45, 172-177		1
14	Finite-time observation of the continuous and discrete state for a class of nonlinear switched dynamics. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2009 , 42, 358-363		1
13	Combined Backstepping/Second-Order Sliding-Mode Boundary Stabilization of an Unstable ReactionDiffusion Process 2020 , 4, 391-396		1
12	High Accuracy Sigma-Delta Modulator implementations via Suboptimal Quasi-Sliding Mode Control 2018 ,		1
11	On the Robust Distributed Secondary Control of Islanded Inverter-Based Microgrids. <i>Studies in Systems, Decision and Control</i> , 2020 , 309-357	0.8	0
10	A Sliding Mode Observer Design for the Average State Estimation in Large-Scale Systems 2022 , 6, 632-637		0

- 9 Resilient Constrained Optimization in Multi-Agent Systems with Improved Guarantee on Approximation Bounds **2022**, 1-1 0
- 8 Retaining Connectivity In Mobile Communication Mesh Networks. *IFAC-PapersOnLine*, **2017**, 50, 800-807 0.7
- 7 On the transfer properties of second-order sliding mode control systems. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2008**, 41, 3823-3829
- 6 ON THE FINITE-TIME STABILIZATION OF A NONLINEAR UNCERTAIN DYNAMICS VIA SWITCHED CONTROL. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2006**, 39, 276-282
- 5 Output-Feedback Control of an Underwater Vehicle Prototype: Theory and Experiments. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2003**, 36, 449-454
- 4 Output-feedback control of an underwater vehicle prototype by higher-order sliding modes*1. *Automatica*, **2004**, 40, 1525-1525 5.7
- 3 On the Finite-Time Stabilization of a Nonlinear Uncertain Dynamics VIA Switched Control **2006**, 276-282
- 2 Robustification of Cooperative Consensus Algorithms in Perturbed Multi-agents Systems. *Studies in Systems, Decision and Control*, **2018**, 247-267 0.8
- 1 Sliding-Mode Boundary Control of an In-Line Heating System Governed by Coupled PDE/ODE Dynamics. *IEEE Transactions on Control Systems Technology*, **2022**, 1-9 4.8