

Vadim I Utkin

List of Publications by Year in descending order

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105
papers

18,709
citations

201385

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114278

63
g-index

118
all docs

118
docs citations

118
times ranked

6455
citing authors

#	ARTICLE	IF	CITATIONS
1	Sliding Modes in Control and Optimization. , 1992, , .		4,575
2	Variable structure systems with sliding modes. IEEE Transactions on Automatic Control, 1977, 22, 212-222.	3.6	4,421
3	A control engineer's guide to sliding mode control. IEEE Transactions on Control Systems Technology, 1999, 7, 328-342.	3.2	1,742
4	Sliding mode control design principles and applications to electric drives. IEEE Transactions on Industrial Electronics, 1993, 40, 23-36.	5.2	1,602
5	Chattering suppression methods in sliding mode control systems. Annual Reviews in Control, 2007, 31, 179-188.	4.4	514
6	Adaptive sliding mode control with application to super-twist algorithm: Equivalent control method. Automatica, 2013, 49, 39-47.	3.0	437
7	Sliding mode control in dynamic systems. International Journal of Control, 1992, 55, 1029-1037.	1.2	354
8	Adaptive sliding mode control in discrete-time systems. Automatica, 1995, 31, 769-773.	3.0	342
9	On multi-input chattering-free second-order sliding mode control. IEEE Transactions on Automatic Control, 2000, 45, 1711-1717.	3.6	308
10	Sensorless sliding-mode control of induction motors. IEEE Transactions on Industrial Electronics, 2000, 47, 1286-1297.	5.2	263
11	Discussion Aspects of High-Order Sliding Mode Control. IEEE Transactions on Automatic Control, 2016, 61, 829-833.	3.6	240
12	Linear and nonlinear controller design for robust automatic steering. IEEE Transactions on Control Systems Technology, 1995, 3, 132-143.	3.2	231
13	Sliding mode control design based on Ackermann's formula. IEEE Transactions on Automatic Control, 1998, 43, 234-237.	3.6	213
14	Sliding mode control of DC/DC converters. Journal of the Franklin Institute, 2013, 350, 2146-2165.	1.9	189
15	On Convergence Time and Disturbance Rejection of Super-Twisting Control. IEEE Transactions on Automatic Control, 2013, 58, 2013-2017.	3.6	183
16	Sliding mode control on electro-mechanical systems. Mathematical Problems in Engineering, 2002, 8, 451-473.	0.6	148
17	Conventional and high order sliding mode control. Journal of the Franklin Institute, 2020, 357, 10244-10261.	1.9	129
18	Simultaneous State and Parameter Estimation in Induction Motors Using First- and Second-Order Sliding Modes. IEEE Transactions on Industrial Electronics, 2009, 56, 3369-3376.	5.2	93

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19	Chattering reduction using multiphase sliding mode control. International Journal of Control, 2009, 82, 1720-1737.	1.2	83
20	CHATTERING PROBLEM IN SLIDING MODE CONTROL SYSTEMS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2006, 39, 1.	0.4	68
21	Adaptive Sliding Mode Control. Lecture Notes in Control and Information Sciences, 2013, , 21-53.	0.6	65
22	Road Map for Sliding Mode Control Design. SpringerBriefs in Mathematics, 2020, , .	0.2	65
23	Sliding Mode Pulsewidth Modulation. IEEE Transactions on Power Electronics, 2008, 23, 619-626.	5.4	64
24	Developing a fault tolerant power-train control system by integrating design of control and diagnostics. International Journal of Robust and Nonlinear Control, 2001, 11, 1095-1114.	2.1	45
25	Sliding mode control of power converters: DC/DC converters. International Journal of Control, 2018, 91, 2472-2493.	1.2	45
26	Adaptive simulation and control of variable-structure control systems in sliding regimes. Automatica, 1996, 32, 1037-1042.	3.0	44
27	Sliding Mode Control: Mathematical Tools, Design and Applications. Lecture Notes in Mathematics, 2008, , 289-347.	0.1	41
28	Chattering analysis of conventional and super twisting sliding mode control algorithm. , 2016, , .		40
29	Energy Management Design in Hybrid Electric Vehicles: A Novel Optimality and Stability Framework. IEEE Transactions on Control Systems Technology, 2015, 23, 1307-1322.	3.2	33
30	Block Control Principle for Mechanical Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2000, 122, 1-10.	0.9	32
31	Tracking the gradient of artificial potential fields: sliding mode control for mobile robots. International Journal of Control, 1996, 63, 417-432.	1.2	28
32	The Chattering Analysis. , 2006, , .		24
33	Sliding-mode control of power converters: AC/DC converters & DC/AC inverters. International Journal of Control, 2018, 91, 2573-2587.	1.2	24
34	Chattering Analysis. , 0, , 107-121.		22
35	A three-layered hierarchical path control system for mobile robots: Algorithms and experiments. Robotics and Autonomous Systems, 1995, 14, 133-147.	3.0	20
36	Robust controller for synchronous generator with local load via VSC. International Journal of Electrical Power and Energy Systems, 2007, 29, 348-359.	3.3	20

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37	Parameters estimation using sliding mode observer with shift operator. Journal of the Franklin Institute, 2012, 349, 1509-1525.	1.9	20
38	Optimal configuration and energy management scheme of an isolated micro-grid using Cuckoo search optimization algorithm. Journal of the Franklin Institute, 2019, 356, 4191-4214.	1.9	19
39	Robot Obstacle Avoidance in n-Dimensional Space Using Planar Harmonic Artificial Potential Fields. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1997, 119, 160-166.	0.9	18
40	On the dynamics and Lyapunov stability of constrained and embedded rigid bodies. International Journal of Control, 2002, 75, 408-420.	1.2	17
41	Sliding mode control of photovoltaic based power generation systems for microgrid applications. International Journal of Control, 2021, 94, 1704-1715.	1.2	15
42	First Stage of VSS: People and Events. , 2002, , 1-32.		15
43	Sliding mode tracking control of systems with unstable zero dynamics. , 1999, , 303-327.		14
44	Self-optimization of photovoltaic system power generation based on sliding mode control. , 2012, , .		14
45	Sliding Mode Control of Underground Coal Gasification Energy Conversion Process. IEEE Transactions on Control Systems Technology, 2018, 26, 587-598.	3.2	14
46	Sliding mode PID control of buck converters. , 2009, , .		13
47	Adaptive super-twist control with minimal chattering effect. , 2011, , .		13
48	Discrete time sliding mode, continuous time sliding mode and vector control of induction motors. International Journal of Control, 2002, 75, 901-909.	1.2	8
49	An adaptive sliding mode observer for induction machines. , 2008, , .		8
50	Sliding mode control of three-phase, boost-type and three-Wire, single-phase AC/DC power converters. , 2014, , .		8
51	Robust multi-objective control design for underground coal gasification energy conversion process. International Journal of Control, 2020, 93, 328-335.	1.2	8
52	Sliding Mode Control for Active Steering of Cars. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1995, 28, 61-66.	0.4	7
53	Data-Driven Modeling and Design of Multivariable Dynamic Sliding Mode Control for the Underground Coal Gasification Project Thar. IEEE Transactions on Control Systems Technology, 2022, 30, 153-165.	3.2	7
54	A sliding mode adaptive MRAS speed estimator for induction motors. , 2008, , .		6

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55	Sliding mode control of AC/DC power converters. , 2013, , .		6
56	Real-Time Implementation of Sliding Mode Observer for Synchronous Rectification of the Automotive Electrical Power Supply System. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2000, 122, 594-598.	0.9	5
57	Nonlinear Estimator Design of Automotive Alternator Utilizing Battery Current and Speed Measurements. European Journal of Control, 2000, 6, 135-149.	1.6	5
58	Sliding Mode Pulse Width Modulation. Proceedings of the American Control Conference, 2007, , .	0.0	5
59	Design of first- and second-order sliding mode observers for induction motors using a stator-flux model. International Journal of Control, 2010, 83, 1457-1464.	1.2	5
60	Recasting the HEV energy management problem into an infinite-time optimization problem including stability. , 2013, , .		5
61	Mechanical energy-based Lyapunov function design for twisting and super-twisting sliding mode control. IMA Journal of Mathematical Control and Information, 2014, , dnu010.	1.1	5
62	Second order sliding mode block control of singleâ€phase induction motors. International Journal of Robust and Nonlinear Control, 2014, 24, 682-698.	2.1	5
63	Sliding mode controllerâ€observer pair for p53 pathway. IET Systems Biology, 2019, 13, 204-211.	0.8	5
64	Sliding mode control of an ozone generator based on dual AC/DC/AC power converters. Proceedings of the Institution of Mechanical Engineers Part I: Journal of Systems and Control Engineering, 2021, 235, 448-460.	0.7	5
65	Shape control of distributed parameter reflectors using sliding mode control. , 2001, , .		5
66	Constrained rigid body stability and control. International Journal of Robust and Nonlinear Control, 2015, 25, 1601-1622.	2.1	4
67	Neuro-adaptive sliding mode control for underground coal gasification energy conversion process. International Journal of Control, 2022, 95, 2337-2348.	1.2	4
68	Adaptive speed tracking controller for a brush-less DC motor using singular perturbation.. IFAC-PapersOnLine, 2020, 53, 3880-3885.	0.5	4
69	Sliding Mode Optimization in Robot Dynamics With LPV Controller Design. , 2022, 6, 1760-1765.		4
70	On the navigation of mobile robots in narrow passages: A general framework based on sliding mode theory. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1994, 27, 79-84.	0.4	3
71	VSS PREMISE IN XX CENTURY: EVIDENCES OF A WITNESS. , 2000, , .		3
72	The Chattering Analysis. , 2006, , .		3

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73	Sliding mode based stator flux and speed observer for induction machines. , 2008, , .		3
74	State and parameter estimation in induction motors using sliding modes. , 2008, , .		3
75	Decentralized sliding-mode control of robotic manipulator with constraint workspace: a finite-convergent barrier Lyapunov approach. , 2019, , .		3
76	On Robust VSS Nonlinear Servomechanism Problem. , 2002, , 343-363.		3
77	Multiphase power boost converters with sliding mode. , 2009, , .		2
78	Prevention of emergency situations with sliding mode control. , 2010, , .		2
79	Brief comments for the continuation method by A.F. Filippov for solution continuation on a discontinuity set. Automation and Remote Control, 2015, 76, 863-871.	0.4	2
80	Frequency control of DC/AC inverter. , 2016, , .		2
81	Design of Feedback Systems with Uncertainties, Based on Equivalent Control. , 2019, , .		2
82	Window observers for linear systems. Mathematical Problems in Engineering, 2000, 6, 411-424.	0.6	1
83	Decomposed control design for non-stationary plants subject to disturbances. International Journal of Control, 2001, 74, 1335-1352.	1.2	1
84	Sliding Mode Control for Industrial Controllers. , 0, , .		1
85	Discrete-time sliding mode regulator for nonminimum phase systems. , 2012, , .		1
86	Disturbance attenuation in nonlinear perturbed diffusion processes by sampled-in-space sensing and actuation. , 2014, , .		1
87	Chattering analysis of sliding mode self-optimization systems. , 2016, , .		1
88	Design of a Continuous Signal Generator Based on Sliding Mode Control of Three-Phase AC-DC Power Converters. Energies, 2019, 12, 4468.	1.6	1
89	Super-twisting-based sliding mode control of drum boiler energy conversion systems. International Journal of Control, 0, , 1-10.	1.2	1
90	Direct Sliding Mode Control of a Three-Phase AC/DC Power Converter for the Velocity Regulation of a DC Motor. IFAC-PapersOnLine, 2020, 53, 13359-13364.	0.5	1

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91	Sliding Mode Design for Two Mass System Based on Reduced Order Model. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 1997, 30, 303-308.	0.4	0
92	Cost functional minimizing sliding mode control design. , 2006, , .		0
93	Sliding mode control of DC/DC multiphase power converters. , 2008, , .		0
94	Simulation of constrained dynamic multibody systems using sliding mode control theory. , 2008, , .		0
95	Boundary value problem order reduction in sliding mode - a power distribution method for hybrid power systems. , 2008, , .		0
96	Power split strategy for hybrid power system with capacitive energy buffer. International Journal of Modelling, Identification and Control, 2008, 3, 225.	0.2	0
97	Sliding Modes for the Simulation of Mechanical and Electrical Systems Defined by Differential-Algebraic Equations. Journal of Computational and Nonlinear Dynamics, 2010, 5, .	0.7	0
98	Divergence theorem for super twisting control. , 2016, , .		0
99	Switching Frequency Optimization of DC/AC Inverters Using Sliding Mode. Studies in Systems, Decision and Control, 2016, , 581-595.	0.8	0
100	Open Problems in SMC. SpringerBriefs in Mathematics, 2020, , 115-124.	0.2	0
101	Adaptive SMC. SpringerBriefs in Mathematics, 2020, , 99-108.	0.2	0
102	Design Principles. SpringerBriefs in Mathematics, 2020, , 29-48.	0.2	0
103	High-Order Sliding Mode Control. SpringerBriefs in Mathematics, 2020, , 83-89.	0.2	0
104	SM Observers. SpringerBriefs in Mathematics, 2020, , 61-71.	0.2	0
105	Alternator with controllable frequency and amplitude. , 2022, , .		0