Jacquelien M A Scherpen

List of Publications by Citations

139 papers	2,014 citations	24 h-index	39 g-index
151 ext. papers	2,506 ext. citations	3.5 avg, IF	5.52 L-index

#	Paper	IF	Citations
139	Balancing for nonlinear systems. *Systems and Control Letters*, **1993**, 21, 143-153	2.4	238
138	Power shaping: a new paradigm for stabilization of nonlinear RLC circuits. *IEEE Transactions on Automatic Control*, **2003**, 48, 1762-1767	5.9	89
137	Multidomain modeling of nonlinear networks and systems. *IEEE Control Systems*, **2009**, 29, 28-59	2.9	71
136	A port-Hamiltonian approach to power network modeling and analysis. *European Journal of Control*, **2013**, 19, 477-485	2.5	64
135	Tuning of passivity-preserving controllers for switched-mode power converters. *IEEE Transactions on Automatic Control*, **2004**, 49, 1333-1344	5.9	61
134	Normalized coprime factorizations and balancing for unstable nonlinear systems. *International Journal of Control*, **1994**, 60, 1193-1222	1.5	61
133	Distributed MPC Applied to a Network of Households With Micro-CHP and Heat Storage. *IEEE Transactions on Smart Grid*, **2014**, 5, 2106-2114	10.7	58
132	Fully distributed robust synchronization of networked Lur□ systems with incremental nonlinearities. *Automatica*, **2014**, 50, 2515-2526	5.7	54
131	An energy-balancing perspective of interconnection and damping assignment control of nonlinear systems. *Automatica*, **2004**, 40, 1643-1646	5.7	53
130	Nonlinear input-normal realizations based on the differential eigenstructure of Hankel operators. *IEEE Transactions on Automatic Control*, **2005**, 50, 2-18	5.9	52
129	Balanced Realization and Model Order Reduction for Nonlinear Systems Based on Singular Value Analysis. *SIAM Journal on Control and Optimization*, **2010**, 48, 4591-4623	1.9	51
128	Power-based control of physical systems. *Automatica*, **2010**, 46, 127-132	5.7	50
127	Distributed Averaging Control for Voltage Regulation and Current Sharing in DC Microgrids **2019**, 3, 174-179		48
126	Model Reduction for Nonlinear Systems by Incremental Balanced Truncation. *IEEE Transactions on Automatic Control*, **2014**, 59, 2739-2753	5.9	38
125	Passivity-Based Control by Series/Parallel Damping of Single-Phase PWM Voltage Source Converter. *IEEE Transactions on Control Systems Technology*, **2014**, 22, 1310-1322	4.8	36
124	Lagrangian modeling of switching electrical networks. *Systems and Control Letters*, **2003**, 48, 365-374	2.4	36
123	Minimality and local state decompositions of a nonlinear state space realization using energy functions. *IEEE Transactions on Automatic Control*, **2000**, 45, 2079-2086	5.9	35

122	H□balancing for nonlinear systems. *International Journal of Robust and Nonlinear Control*, **1996**, 6, 645-668	3.6	35
121	Distributed Control of the Power Supply-Demand Balance. *IEEE Transactions on Smart Grid*, **2013**, 4, 828-836	8.7	34
120	Adaptive switching gain for a discrete-time sliding mode controller. *International Journal of Control*, **2002**, 75, 242-251	1.5	28
119	Discrete exterior geometry approach to structure-preserving discretization of distributed-parameter port-Hamiltonian systems. *Journal of Geometry and Physics*, **2012**, 62, 1509-1531	1.2	27
118	Reduction of Second-Order Network Systems With Structure Preservation. *IEEE Transactions on Automatic Control*, **2017**, 62, 5026-5038	5.9	26
117	A dual relation between port-Hamiltonian systems and the Brayton□Moser equations for nonlinear switched RLC circuits. *Automatica*, **2003**, 39, 969-979	5.7	25
116	Distributed Supply Coordination for Power-to-Gas Facilities Embedded in Energy Grids. *IEEE Transactions on Smart Grid*, **2018**, 9, 1012-1022	10.7	24
115	A power-based description of standard mechanical systems. *Systems and Control Letters*, **2007**, 56, 349-356	2.4	21
114	Structure Preserving Adaptive Control of Port-Hamiltonian Systems. *IEEE Transactions on Automatic Control*, **2012**, 57, 2880-2885	5.9	20
113	On the nonuniqueness of singular value functions and balanced nonlinear realizations. *Systems and Control Letters*, **2001**, 44, 219-232	2.4	20
112	Distributed Optimal Control of Smart Electricity Grids With Congestion Management. *IEEE Transactions on Automation Science and Engineering*, **2017**, 14, 494-504	4.9	18
111	Clustering approach to model order reduction of power networks with distributed controllers. *Advances in Computational Mathematics*, **2018**, 44, 1917-1939	1.6	18
110	Hamiltonian realizations of nonlinear adjoint operators. *Automatica*, **2002**, 38, 1769-1775	5.7	18
109	Power supply□demand balance in a Smart Grid: An information sharing model for a market mechanism. *Applied Mathematical Modelling*, **2014**, 38, 3350-3360	4.5	17
108	Nonlinear Hilbert adjoints: properties and applications to Hankel singular value analysis. *Nonlinear Analysis: Theory, Methods & Applications*, **2002**, 51, 883-901	1.3	17
107	Graph structure-preserving model reduction of linear network systems **2016**,		16
106	Power-based control: Canonical coordinate transformations, integral and adaptive control. *Automatica*, **2012**, 48, 1045-1056	5.7	15
105	Explicit simplicial discretization of distributed-parameter port-Hamiltonian systems. *Automatica*, **2014**, 50, 369-377	5.7	15

104	A power-based perspective in modeling and control of switched power converters [Past and Present]. *IEEE Industrial Electronics Magazine*, **2007**, 1, 7-54	6.2	15
103	Robust load frequency control of nonlinear power networks** Preliminary results appeared in Trip, Cucuzzella, Ferrara, and De Persis (2017).View all notes. *International Journal of Control*, **2020**, 93, 346-359	1.5	15
102	Linear Parameter Varying Control of Doubly Fed Induction Machines. *IEEE Transactions on Industrial Electronics*, **2016**, 63, 216-224	8.9	14
101	Robust Passivity-Based Control of Boost Converters in DC Microgrids? **2019**,		13
100	Balanced truncation of networked linear passive systems. *Automatica*, **2019**, 104, 17-25	5.7	12
99	Model Reduction by Differential Balancing Based on Nonlinear Hankel Operators. *IEEE Transactions on Automatic Control*, **2017**, 62, 3293-3308	5.9	12
98	. *IEEE Transactions on Automatic Control*, **2011**, 56, 2073-2086	5.9	12
97	Formation control of a multi-agent system subject to Coulomb friction. *Automatica*, **2015**, 61, 253-262	5.7	11
96	A Novel Reduced Model for Electrical Networks With Constant Power Loads. *IEEE Transactions on Automatic Control*, **2018**, 63, 1288-1299	5.9	11
95	Formation Control and Velocity Tracking for a Group of Nonholonomic Wheeled Robots. *IEEE Transactions on Automatic Control*, **2016**, 61, 2702-2707	5.9	11
94	Dynamic Feedback Synchronization of Lur'e Networks via Incremental Sector Boundedness. *IEEE Transactions on Automatic Control*, **2016**, 61, 2579-2584	5.9	11
93	Port-Hamiltonian Modeling of a Nonlinear Timoshenko Beam with Piezo Actuation. *SIAM Journal on Control and Optimization*, **2014**, 52, 493-519	1.9	11
92	. *IEEE Transactions on Automatic Control*, **2021**, 66, 625-636	5.9	11
91	Model Order Reduction and Composite Control for a Class of Slow-Fast Systems Around a Non-Hyperbolic Point **2017**, 1, 68-73		10
90	Modeling for control of a kinematic wobble-yoke Stirling engine. *Renewable Energy*, **2015**, 75, 808-817	8.1	10
89	Model Reduction of Multiagent Systems Using Dissimilarity-Based Clustering. *IEEE Transactions on Automatic Control*, **2019**, 64, 1663-1670	5.9	10
88	Structure Preserving Spatial Discretization of a 1-D Piezoelectric Timoshenko Beam. *Multiscale Modeling and Simulation*, **2011**, 9, 129-154	1.8	10
87	Dissipativity preserving balancing for nonlinear systems □A Hankel operator approach. *Systems and Control Letters*, **2010**, 59, 180-194	2.4	10

86	Disturbance rejection in formation keeping control of nonholonomic wheeled robots. *International Journal of Robust and Nonlinear Control*, **2016**, 26, 3344-3362	3.6	10
85	Equal distribution of satellite constellations on circular target orbits. *Automatica*, **2014**, 50, 2641-2647	5.7	9
84	Stabilization and shape control of a 1D piezoelectric Timoshenko beam. *Automatica*, **2011**, 47, 2780-2785	5.7	8
83	. *IEEE Transactions on Automation Science and Engineering*, **2004**, 20, 480-487		8
82	Hankel singular value functions from Schmidt pairs for nonlinear input□output systems. *Systems and Control Letters*, **2005**, 54, 135-144	2.4	8
81	A networked reduced model for electrical networks with constant power loads **2016**,		8
80	Differentiation and Passivity for Control of Brayton□Moser Systems. *IEEE Transactions on Automatic Control*, **2021**, 66, 1087-1101	5.9	8
79	Cooperative Voltage Control in AC Microgrids **2018**,		8
78	Distributed supply□demand balancing and the physics of smart energy systems. *European Journal of Control*, **2015**, 24, 63-71	2.5	7
77	Cryogenic mechatronic design of the HIFI Focal Plane Chopper. *Mechatronics*, **2011**, 21, 1259-1271	3	7
76	Energy functions for dissipativity-based balancing of discrete-time nonlinear systems. *Mathematics of Control, Signals, and Systems*, **2006**, 18, 345-368	1.3	7
75	Singular Value Analysis and Balanced Realizations for Nonlinear Systems. *Mathematics in Industry*, **2008**, 251-272	0.2	7
74	. *IEEE Transactions on Automatic Control*, **2020**, 65, 2094-2106	5.9	7
73	Introducing network Gramians to undirected network systems for structure-preserving model reduction **2016**,		7
72	Model reduction of a flexible-joint robot: a port-Hamiltonian approach. *IFAC-PapersOnLine*, **2016**, 49, 832-837	0.7	7
71	On Tracking Control of Rigid-Joint Robots With Only Position Measurements. *IEEE Transactions on Control Systems Technology*, **2013**, 21, 1510-1513	4.8	6
70	Distributed MPC for Power-to-Gas facilities embedded in the energy grids **2015**,		6
69	Fault detection method for nonlinear systems based on probabilistic neural network filtering. *International Journal of Systems Science*, **2002**, 33, 1039-1050	2.3	6

68	H ∞ output feedback control for linear discrete time-varying systems via the bounded real lemma. *International Journal of Control*, **1996**, 65, 963-993	1.5	6
67	Distributed Passivity-Based Control of DC Microgrids **2019**,		6
66	Robust cooperative output regulation of heterogeneous Lur'e networks. *International Journal of Robust and Nonlinear Control*, **2017**, 27, 3061-3078	3.6	5
65	Stabilization of a class of slow–fast control systems at non-hyperbolic points. *Automatica*, **2019**, 99, 13-21	5.7	5
64	Empirical Differential Balancing for Nonlinear Systems. *IFAC-PapersOnLine*, **2017**, 50, 6326-6331	0.7	5
63	Nonlinear Cross Gramians. *IFIP Advances in Information and Communication Technology*, **2009**, 293-306	0.5	5
62	Port-Hamiltonian based Optimal Power Flow algorithm for multi-terminal DC networks. *Control Engineering Practice*, **2019**, 83, 141-150	3.9	5
61	Output Regulation for Voltage Control in DC Networks With Time-Varying Loads **2021**, 5, 797-802		5
60	Exponential Stability and Local ISS for DC Networks **2021**, 5, 893-898		5
59	Distributed Averaging Control for Voltage Regulation and Current Sharing in DC Microgrids: Modelling and Experimental Validation. *IFAC-PapersOnLine*, **2018**, 51, 242-247	0.7	5
58	Structure Preserving Truncation of Nonlinear Port Hamiltonian Systems. *IEEE Transactions on Automatic Control*, **2018**, 63, 4286-4293	5.9	4
57	Passivity-based control of active and reactive power in single-phase PV inverters **2017**,		4
56	Balanced Truncation Approach to Linear Network System Model Order Reduction. *IFAC-PapersOnLine*, **2017**, 50, 2451-2456	0.7	4
55	Robust synchronization of directed Lur'e networks with incremental nonlinearities **2014**,		4
54	Hamiltonian perspective on compartmental reaction–diffusion networks. *Automatica*, **2014**, 50, 737-746	5.7	4
53	Distributed MPC for controlling μCHPs in a network **2012**,		4
52	Clustering-Based Model Reduction of Laplacian Dynamics With Weakly Connected Topology. *IEEE Transactions on Automatic Control*, **2020**, 65, 4393-4399	5.9	4
51	A price-based approach for voltage regulation and power loss minimization in power distribution networks **2016**,		4

50	Passivity-Based Lag-Compensators With Input Saturation for Mechanical Port-Hamiltonian Systems Without Velocity Measurements **2021**, 5, 1285-1290		4
49	A Consensus-Based Controller for DC Power Networks. *IFAC-PapersOnLine*, **2018**, 51, 205-210	0.7	4
48	Absolute stabilization of Lurâ systems via dynamic output feedback. *European Journal of Control*, **2018**, 44, 15-26	2.5	4
47	Asynchronous Distributed Control of Biogas Supply and Multienergy Demand. *IEEE Transactions on Automation Science and Engineering*, **2017**, 14, 558-572	4.9	3
46	Model reduction of synchronized homogeneous Lurâ networks with incrementally sector-bounded nonlinearities. *European Journal of Control*, **2019**, 50, 11-19	2.5	3
45	On differential balancing: Energy functions and balanced realization **2015**,		3
44	Passivity-based control of multi-terminal HVDC systems under control saturation constraints. *IFAC-PapersOnLine*, **2015**, 48, 135-140	0.7	3
43	A Port-Hamiltonian Approach to Visual Servo Control of a Pick and Place System. *Asian Journal of Control*, **2014**, 16, 703-713	1.7	3
42	Robust synchronization of Lur'e networks with incremental nonlinearities **2013**,		3
41	On mechanical mixed potential, content and co-content **2003**,		3
40	Families of moment matching-based reduced order models for linear descriptor systems **2016**,		3
39	Charging plug-in electric vehicles as a mixed-integer aggregative game **2019**,		3
38	Demand Flexibility Management for Buildings-to-Grid Integration with Uncertain Generation. *Energies*, **2020**, 13, 6532	3.1	2
37	A cyclodissipativity characterization of power factor compensation of nonlinear loads under nonsinusoidal conditions. *International Journal of Circuit Theory and Applications*, **2012**, 40, 1053-1069	2	2
36	Memristive port-Hamiltonian control: Path-dependent damping injection in control of mechanical systems. *European Journal of Control*, **2013**, 19, 454-460	2.5	2
35	Optimal Power Flow for resistive DC Networks: a Port-Hamiltonian approach. *IFAC-PapersOnLine*, **2017**, 50, 25-30	0.7	2
34	Formation control of nonholonomic wheeled robots in the presence of matched input disturbances. *IFAC-PapersOnLine*, **2015**, 48, 63-68	0.7	2
33	Cooperative robust output regulation of heterogeneous Lur'e networks **2015**,		2

32	Distributed asynchronous supply coordination for energy producers embedded in the energy grids **2015**,		2
31	Notch Filters for Port-Hamiltonian Systems. *IEEE Transactions on Automatic Control*, **2015**, 60, 2440-24455.9		2
30	PD control of a second-order system with hysteretic actuator **2013**,		2
29	Power factor compensation with lossless linear filters is equivalent to (weighted) power equalization and a new cyclo-dissipativity characterization **2009**,		2
28	A Class of Standard Mechanical System with Force Feedback in the port-Hamiltonian Framework. *IFAC Postprint Volumes IPPV / International Federation of Automatic Control*, **2012**, 45, 90-95		2
27	Passivity preserving model order reduction for the SMIB **2008**,		2
26	Nonlinear cross Gramians and gradient systems **2007**,		2
25	The Optimal Control Problem in Smart Energy Grids. *Power Systems*, **2016**, 95-111	0.4	2
24	Model Reduction by Generalized Differential Balancing. *Lecture Notes in Control and Information Sciences*, **2015**, 349-362	0.5	2
23	Empirical differential Gramians for nonlinear model reduction. *Automatica*, **2021**, 127, 109534	5.7	2
22	Buildings-to-Grid Integration with High Wind Power Penetration **2019**,		2
21	Krasovskiĭ Passivity. *IFAC-PapersOnLine*, **2019**, 52, 466-471	0.7	2
20	Balanced Model Reduction for Linear Time-Varying Symmetric Systems. *IEEE Transactions on Automatic Control*, **2019**, 64, 3060-3067	5.9	2
19	Distributed control of DC grids: integrating prosumers motives. *IEEE Transactions on Power Systems* , **2021**, 1-1	7	2
18	Output Regulation for Load Frequency Control. *IEEE Transactions on Control Systems Technology*, **2021**, 1-15	4.8	2
17	Position Control via Force Feedback in the Port-Hamiltonian Framework. *Lecture Notes in Control and Information Sciences*, **2017**, 181-207	0.5	1
16	A new controllability Gramian for semistable systems and its application to approximation of directed networks **2017**,		1
15	Sufficient condition for minimal realization of incrementally stable nonlinear systems based on differential energy functions **2015**,		1

List of Publications

14	Position control via force feedback for a class of standard mechanical systems in the port-Hamiltonian framework **2013**,		1
13	A cyclodissipativity condition for power factor improvement under nonsinusoidal source with significant impedance **2010**,		1
12	Robust output regulation for voltage control in DC networks with time-varying loads. *Automatica*, **2022**, 135, 109997	5.7	1
11	Generalized Differential Balancing for Variationally Symmetric Systems. *IFAC-PapersOnLine*, **2016**, 49, 844-849	0.7	1
10	Improving the Region of Attraction of a Non-Hyperbolic Point in Slow-Fast Systems With One Fast Direction **2018**, 2, 296-301		1
9	Krasovskii and Shifted Passivity-Based Control. *IEEE Transactions on Automatic Control*, **2021**, 66, 4926-4932	5.7	1
8	Tuning Rules for a Class of Passivity-Based Controllers for Mechanical Systems **2021**, 5, 1892-1897		1
7	H2 model reduction for diffusively coupled second-order networks by convex-optimization. *Automatica*, **2022**, 137, 110118	5.7	0
6	Passivity properties for regulation of DC networks with stochastic load demand. *IFAC-PapersOnLine* , **2020**, 53, 13113-13118	0.7	0
5	Adaptive Control for Flow and Volume Regulation in Multi-Producer District Heating Systems **2022**, 6, 794-799		0
4	Power-Based Modelling. *Advances in Industrial Control*, **2012**, 245-271	0.3	
3	Discussion on: Stabilization of the Experimental Cart-Pendulum System with Proven Domain of Attraction *European Journal of Control*, **2010**, 16, 341-342	2.5	
2	Introduction Smart Grids: Design, Analysis and Implementation of a New Socio-technical System. *Power Systems*, **2016**, 1-8	0.4	
1	Balanced Realizations, Model Order Reduction, and the Hankel Operator. *The Electrical Engineering Handbook*, **2010**, 4-1-4-24		