

Claudio Altafini

List of Publications by Year in descending order

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134
papers

4,284
citations

218677

26
h-index

114465

63
g-index

137
all docs

137
docs citations

137
times ranked

2646
citing authors

#	ARTICLE	IF	CITATIONS
1	Consensus Problems on Networks With Antagonistic Interactions. IEEE Transactions on Automatic Control, 2013, 58, 935-946.	5.7	1,342
2	Computing global structural balance in large-scale signed social networks. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 20953-20958.	7.1	305
3	Dynamics of Opinion Forming in Structurally Balanced Social Networks. PLoS ONE, 2012, 7, e38135.	2.5	194
4	Modeling and Control of Quantum Systems: An Introduction. IEEE Transactions on Automatic Control, 2012, 57, 1898-1917.	5.7	187
5	Predictable Dynamics of Opinion Forming for Networks With Antagonistic Interactions. IEEE Transactions on Automatic Control, 2015, 60, 342-357.	5.7	169
6	Controllability of quantum mechanical systems by root space decomposition of $su(N)$. Journal of Mathematical Physics, 2002, 43, 2051.	1.1	148
7	Controllability properties for finite dimensional quantum Markovian master equations. Journal of Mathematical Physics, 2003, 44, 2357.	1.1	126
8	Some properties of the general n-trailer. International Journal of Control, 2001, 74, 409-424.	1.9	100
9	Comparing association network algorithms for reverse engineering of large-scale gene regulatory networks: synthetic versus real data. Bioinformatics, 2007, 23, 1640-1647.	4.1	100
10	A feedback control scheme for reversing a truck and trailer vehicle. IEEE Transactions on Automation Science and Engineering, 2001, 17, 915-922.	2.3	99
11	Coherent control of open quantum dynamical systems. Physical Review A, 2004, 70, .	2.5	77
12	Feedback Stabilization of Isospectral Control Systems on Complex Flag Manifolds: Application to Quantum Ensembles. IEEE Transactions on Automatic Control, 2007, 52, 2019-2028.	5.7	66
13	Dynamics over Signed Networks. SIAM Review, 2019, 61, 229-257.	9.5	66
14	Following a path of varying curvature as an output regulation problem. IEEE Transactions on Automatic Control, 2002, 47, 1551-1556.	5.7	56
15	Minimum energy control for complex networks. Scientific Reports, 2018, 8, 3188.	3.3	53
16	Path following with reduced off-tracking for multibody wheeled vehicles. IEEE Transactions on Control Systems Technology, 2003, 11, 598-605.	5.2	50
17	Determining the distance to monotonicity of a biological network: a graph-theoretical approach. IET Systems Biology, 2010, 4, 223-235.	1.5	47
18	Signed bounded confidence models for opinion dynamics. Automatica, 2018, 93, 114-125.	5.0	44

#	ARTICLE	IF	CITATIONS
19	Feedback Control of Spin Systems. <i>Quantum Information Processing</i> , 2007, 6, 9-36.	2.2	35
20	A system-theoretic framework for privacy preservation in continuous-time multiagent dynamics. <i>Automatica</i> , 2020, 122, 109253.	5.0	34
21	Common dynamical features of sensory adaptation in photoreceptors and olfactory sensory neurons. <i>Scientific Reports</i> , 2013, 3, 1251.	3.3	32
22	Discerning static and causal interactions in genome-wide reverse engineering problems. <i>Bioinformatics</i> , 2008, 24, 1510-1515.	4.1	31
23	Hybrid Control of a Truck and Trailer Vehicle. <i>Lecture Notes in Computer Science</i> , 2002, , 21-34.	1.3	29
24	Exploring the low-energy landscape of large-scale signed social networks. <i>Physical Review E</i> , 2012, 86, 036116.	2.1	29
25	Stabilization of Stochastic Quantum Dynamics via Open- and Closed-Loop Control. <i>IEEE Transactions on Automatic Control</i> , 2013, 58, 74-85.	5.7	27
26	Predicting and characterizing selective multiple drug treatments for metabolic diseases and cancer. <i>BMC Systems Biology</i> , 2012, 6, 115.	3.0	26
27	The phototransduction machinery in the rod outer segment has a strong efficacy gradient. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E2715-24.	7.1	25
28	Minimal eventually positive realizations of externally positive systems. <i>Automatica</i> , 2016, 68, 140-147.	5.0	25
29	Interval Consensus for Multiagent Networks. <i>IEEE Transactions on Automatic Control</i> , 2020, 65, 1855-1869.	5.7	23
30	Stability analysis of diagonally equipotent matrices. <i>Automatica</i> , 2013, 49, 2780-2785.	5.0	21
31	Redundant Robotic Chains on Riemannian Submersions. <i>IEEE Transactions on Automation Science and Engineering</i> , 2004, 20, 335-340.	2.3	20
32	Detection of transcriptional triggers in the dynamics of microbial growth: application to the respiratorily versatile bacterium <i>Shewanella oneidensis</i> . <i>Nucleic Acids Research</i> , 2012, 40, 7132-7149.	14.5	20
33	Drug combinatorics and side effect estimation on the signed human drug-target network. <i>BMC Systems Biology</i> , 2016, 10, 74.	3.0	20
34	The de casteljau algorithm on $SE(3)$. , 2001, , 23-34.		19
35	Sequential steps underlying neuronal plasticity induced by a transient exposure to gabazine. <i>Journal of Cellular Physiology</i> , 2010, 222, 713-728.	4.1	19
36	ERNEST: a toolbox for chemical reaction network theory. <i>Bioinformatics</i> , 2009, 25, 2853-2854.	4.1	19

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37	A Dynamical Feedback Model for Adaptation in the Olfactory Transduction Pathway. Biophysical Journal, 2012, 102, 2677-2686.	0.5	19
38	The reachable set of a linear endogenous switching system. Systems and Control Letters, 2002, 47, 343-353.	2.3	18
39	Tensor of coherences parametrization of multiqubit density operators for entanglement characterization. Physical Review A, 2004, 69, .	2.5	18
40	Multiequilibria Analysis for a Class of Collective Decision-Making Networked Systems. IEEE Transactions on Control of Network Systems, 2018, 5, 1931-1940.	3.7	18
41	Monotonicity, frustration, and ordered response: an analysis of the energy landscape of perturbed large-scale biological networks. BMC Systems Biology, 2010, 4, 83.	3.0	17
42	Reduction by group symmetry of second order variational problems on a semidirect product of Lie groups with positive definite Riemannian metric. ESAIM - Control, Optimisation and Calculus of Variations, 2004, 10, 526-548.	1.3	15
43	Investigating the Conformational Stability of Prion Strains through a Kinetic Replication Model. PLoS Computational Biology, 2009, 5, e1000420.	3.2	15
44	Path following with reduced off-tracking for the n-trailer system. , 0, , .		14
45	Autonomous landing by computer vision: an application of path following in SE(3). , 0, , .		14
46	Controllability and simultaneous controllability of isospectral bilinear control systems on complex flag manifolds. Systems and Control Letters, 2009, 58, 213-216.	2.3	14
47	Why to use an articulated vehicle in underground mining operations?. , 0, , .		13
48	Representing multiqubit unitary evolutions via Stokes tensors. Physical Review A, 2004, 70, .	2.5	13
49	Qualitative and quantitative responses to press perturbations in ecological networks. Scientific Reports, 2017, 7, 11378.	3.3	13
50	Dynamics of opinion forming in structurally balanced social networks. , 2012, , .		12
51	Achieving consensus in multilateral international negotiations: The case study of the 2015 Paris Agreement on climate change. Science Advances, 2021, 7, eabg8068.	10.3	12
52	Title is missing!. Quantum Information Processing, 2002, 1, 207-224.	2.2	11
53	Origin of Co-Expression Patterns in E.coli and S.cerevisiae Emerging from Reverse Engineering Algorithms. PLoS ONE, 2008, 3, e2981.	2.5	11
54	Combining centrality measures for control energy reduction in network controllability problems. , 2019, , .		11

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55	Centrality Measures and the Role of Non-Normality for Network Control Energy Reduction. , 2021, 5, 1013-1018.		11
56	A system-level approach for deciphering the transcriptional response to prion infection. Bioinformatics, 2011, 27, 3407-3414.	4.1	10
57	Early Phase of Plasticity-Related Gene Regulation and SRF Dependent Transcription in the Hippocampus. PLoS ONE, 2013, 8, e68078.	2.5	10
58	Thermodynamic model of gene regulation for the Or59b olfactory receptor in Drosophila. PLoS Computational Biology, 2019, 15, e1006709.	3.2	10
59	A Path-Tracking Criterion for an LHD Articulated Vehicle. International Journal of Robotics Research, 1999, 18, 435-441.	8.5	10
60	A driver node selection strategy for minimizing the control energy in complex networks 1 1Work supported in part by a grant from the Swedish Research Council (grant n. 2015-04390 to C.A.).. IFAC-PapersOnLine, 2017, 50, 8309-8314.	0.9	9
61	Spectral Conditions for Stability and Stabilization of Positive Equilibria for a Class of Nonlinear Cooperative Systems. IEEE Transactions on Automatic Control, 2018, 63, 402-417.	5.7	9
62	The general n-trailer problem: conversion into chained form. , 0, , .		8
63	Backward line tracking control of a radio-controlled truck and trailer. , 0, , .		8
64	Parameter differentiation and quantum state decomposition for time varying Schrödinger equations. Reports on Mathematical Physics, 2003, 52, 381-400.	0.8	8
65	Decompositions of large-scale biological systems based on dynamical properties. Bioinformatics, 2012, 28, 76-83.	4.1	8
66	A bounded confidence model that preserves the signs of the opinions. , 2016, , .		8
67	Achieving a decision in antagonistic multi agent networks: frustration determines commitment strength. , 2018, , .		8
68	A signed network perspective on the government formation process in parliamentary democracies. Scientific Reports, 2021, 11, 5134.	3.3	8
69	Controllability of complex networks with unilateral inputs. Scientific Reports, 2017, 7, 1824.	3.3	7
70	Inverse kinematics along a geometric spline for a holonomic mobile manipulator. , 0, , .		6
71	mRNA stability and the unfolding of gene expression in the long-period yeast metabolic cycle. BMC Systems Biology, 2009, 3, 18.	3.0	6
72	Characterization of the time course of changes of the evoked electrical activity in a model of a chemically-induced neuronal plasticity. BMC Research Notes, 2009, 2, 13.	1.4	6

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73	Homogeneous Polynomial Forms for Simultaneous Stabilizability of Families of Linear Control Systems: A Tensor Product Approach. IEEE Transactions on Automatic Control, 2006, 51, 1566-1571.	5.7	5
74	Feedback schemes for radiation damping suppression in NMR: A control-theoretical perspective. Systems and Control Letters, 2010, 59, 782-786.	2.3	5
75	Achieving consensus on networks with antagonistic interactions. , 2012, , .		5
76	Partial inhibition and bilevel optimization in flux balance analysis. BMC Bioinformatics, 2013, 14, 344.	2.6	5
77	Investigating stability of Laplacians on signed digraphs via eventual positivity. , 2019, , .		5
78	Using high-throughput multi-omics data to investigate structural balance in elementary gene regulatory network motifs. Bioinformatics, 2021, 38, 173-178.	4.1	5
79	Multi-omics protein-coding units as massively parallel Bayesian networks: Empirical validation of causality structure. IScience, 2022, 25, 104048.	4.1	5
80	General n-trailer, differential flatness and equivalence. , 0, , .		4
81	Controllability of open quantum systems: The two level case. , 0, , .		4
82	Reflection symmetries for multiqubit density operators. Journal of Mathematical Physics, 2006, 47, 032104.	1.1	4
83	Existence, uniqueness and stability properties of positive equilibria for a class of nonlinear cooperative systems. , 2015, , .		4
84	Positive controllability of large-scale networks. , 2016, , .		4
85	Interval consensus: A novel class of constrained consensus problems for multiagent networks. , 2017, , .		4
86	Interaction sign patterns in biological networks: From qualitative to quantitative criteria. , 2017, , .		4
87	Signed Social Networks With Biased Assimilation. IEEE Transactions on Automatic Control, 2022, 67, 5134-5149.	5.7	4
88	Robust control of a flash dryer plant. , 0, , .		3
89	Observing the load dynamic of an overhead crane with minimal sensor equipment. , 0, , .		3
90	Representing externally positive systems through minimal eventually positive realizations. , 2015, , .		3

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91	Nonintegrable discrete-time driftless control systems: Geometric phases beyond the area rule. , 2016, , .		3
92	A biased assimilation model on signed graphs. , 2020, , .		3
93	The Role of Frustration in Collective Decision-Making Dynamical Processes on Multiagent Signed Networks. IEEE Transactions on Automatic Control, 2022, 67, 5191-5206.	5.7	3
94	Explicit Wei-Norman formulae for matrix Lie groups. , 0, , .		2
95	Geometric Motion Control for a Kinematically Redundant Robotic Chain: Application to a Holonomic Mobile Manipulator. Journal of Field Robotics, 2003, 20, 211-227.	0.7	2
96	Explicit Wei-Norman formulae for matrix Lie groups via Putzer's method. Systems and Control Letters, 2005, 54, 1121-1130.	2.3	2
97	Commuting multiparty quantum observables and local compatibility. Physical Review A, 2005, 72, .	2.5	2
98	Feedback stabilization of quantum ensembles: a global convergence analysis on complex flag manifolds. , 2006, , .		2
99	A kinetic mechanism inducing oscillations in simple chemical reactions networks. , 2008, , .		2
100	A rate-distortion theory for gene regulatory networks and its application to logic gate consistency. Bioinformatics, 2013, 29, 1166-1173.	4.1	2
101	Achieving unanimous opinions in signed social networks. , 2014, , .		2
102	Metabolic Adaptation Processes That Converge to Optimal Biomass Flux Distributions. PLoS Computational Biology, 2015, 11, e1004434.	3.2	2
103	The Geometric Phase of Stock Trading. PLoS ONE, 2016, 11, e0161538.	2.5	2
104	On the impact of edge modifications for networked control systems. IFAC-PapersOnLine, 2020, 53, 10969-10974.	0.9	2
105	Achieving consensus in spite of stubbornness: time-varying concatenated Friedkin-Johnsen models. , 2021, , .		2
106	On the properties of Laplacian pseudoinverses. , 2021, , .		2
107	Zero dynamics and off-tracking bounds for the path following problem of wheeled vehicles. , 0, , .		1
108	Motion on Constrained Submanifolds for a Kinematic Control System Evolving on a Matrix Lie Group. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2001, 34, 185-190.	0.4	1

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109	Redundant robotic chains on Riemannian manifolds. , 0, , .		1
110	Motion on submanifolds of noninvariant holonomic constraints for a kinematic control system evolving on a matrix Lie group. Systems and Control Letters, 2003, 50, 241-250.	2.3	1
111	Quantum markovian master equation driven by coherent controls: a controllability analysis. , 0, , .		1
112	Homogeneous Polynomial Forms for Simultaneous Stabilizability of Families of Linear Control Systems: a Tensor Product Approach. , 2006, , .		1
113	LINEAR AND NONLINEAR METHODS FOR GENE REGULATORY NETWORK INFERENCE. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 533-538.	0.4	1
114	Adaptation as a genome-wide autoregulatory principle in the stress response of yeast. IET Systems Biology, 2011, 5, 269-279.	1.5	1
115	Guest Editorial: Special Issue on Control of Quantum Mechanical Systems. IEEE Transactions on Automatic Control, 2012, 57, 1893-1895.	5.7	1
116	An infinitesimal characterization of nonlinear contracting interference functions. , 2016, , .		1
117	Involutive flows and discretization errors for nonlinear driftless control systems. Systems and Control Letters, 2017, 110, 29-37.	2.3	1
118	Minimum energy control for networks of coupled harmonic oscillators * *Work supported in part by a grant from the Swedish Research Council (grant n. 2015-04390 to C.A.). IFAC-PapersOnLine, 2017, 50, 8321-8326.	0.9	1
119	Investigating mixed-sign equilibria for nonlinear collective decision-making systems. , 2017, , .		1
120	Algebraic-graphical approach for signed dynamical networks. , 2017, , .		1
121	A kinetic mechanism inducing oscillations in simple chemical reactions networks. Mathematical Biosciences and Engineering, 2010, 7, 301-312.	1.9	1
122	On the generation of discrete unitary gates from continuous time forced Schrodinger equations. , 0, , .		0
123	Feedback stabilization of spin systems. , 0, , .		0
124	CONTROLLABILITY OF ISOSPECTRAL BILINEAR CONTROL SYSTEMS ON COMPLEX FLAG MANIFOLDS. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2007, 40, 894-897.	0.4	0
125	Modeling the genome-wide transient response to stimuli in yeast: Adaptation through integral feedback. , 2008, , .		0
126	Feedback schemes for radiation damping suppression in NMR: a control-theoretical perspective. , 2009, , .		0

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127	Short- and long-term adaptation in olfactory transduction as a leaky integral feedback. , 2009, , .		0
128	Average frustration and phase transition in large-scale biological networks: a statistical physics approach. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2010, 43, 320-325.	0.4	0
129	Erratum for “Feedback Stabilization of Isospectral Control Systems on Complex Flag Manifolds: Application to Quantum Ensembles” [Nov 07 2019-2028]. IEEE Transactions on Automatic Control, 2011, 56, 1232-1232.	5.7	0
130	Environment-assisted and feedback-assisted stabilization of quantum stochastic evolutions. , 2012, , .		0
131	A continuous-time dynamical system that can sort agents through distributed protocols. , 2014, , .		0
132	Restricted Spots of Light Reveal an Efficacy Gradient of the Phototransduction Cascade Along the Rod Outer Segment. Biophysical Journal, 2014, 106, 20a.	0.5	0
133	Topological aspects of controlling large scale networks with unilateral inputs * *Work supported in part by a grant from the Swedish Research Council (grant n. 2015-04390 to C.A.). IFAC-PapersOnLine, 2017, 50, 8315-8320.	0.9	0
134	Modeling wireless power transfer in a network of smart devices: a compartmental system approach. , 2018, , .		0