Alfio Borzi

List of Publications by Year
in descending order

119 papers	2,467 citations	279701 23 h-index	243529 44 g-index
126 all docs	126 docs citations	126 times ranked	1856 citing authors

#	Article	IF	Citations
1	On the SQH Method for Solving Differential Nash Games. Journal of Dynamical and Control Systems, 2022, 28, 739-755.	0.4	1
2	Hierarchicalâ€matrix method for a class of diffusionâ€dominated partial integroâ€differential equations. Numerical Linear Algebra With Applications, 2022, 29, e2410.	0.9	0
3	Ecosystem models and social balance from a synchronization perspective. International Journal of Modern Physics C, 2022, 33, .	0.8	2
4	A sequential quadratic hamiltonian algorithm for training explicit RK neural networks. Journal of Computational and Applied Mathematics, 2022, 405, 113943.	1.1	5
5	Nash Equilibria and Bargaining Solutions of Differential Bilinear Games. Dynamic Games and Applications, 2021, 11, 1-28.	1.1	3
6	Optimal Control of the Keilson-Storer Master Equation in a Monte Carlo Framework. Journal of Computational and Theoretical Transport, 2021, 50, 454-482.	0.3	5
7	A numerical investigation of Brockettâ€™s ensemble optimal control problems. Numerische Mathematik, 2021, 149, 1-42.	0.9	5
8	MOCOKI: A Monte Carlo approach for optimal control in the force of a linear kinetic model. Computer Physics Communications, 2021, 266, 108030.	3.0	3
9	A sequential quadratic Hamiltonian scheme to compute optimal relaxed controls. ESAIM - Control, Optimisation and Calculus of Variations, 2021, 27, 49.	0.7	0
10	A Fokker–Planck Approach to the Reconstruction of a Cell Membrane Potential. SIAM Journal of Scientific Computing, 2021, 43, B623-B649.	1.3	4
11	A sequential quadratic Hamiltonian scheme for solving non-smooth quantum control problems with sparsity. Journal of Computational and Applied Mathematics, 2020, 369, 112583.	1.1	9
12	The Pontryagin maximum principle for solving Fokkerâ€“Planck optimal control problems. Computational Optimization and Applications, 2020, 76, 499-533.	0.9	11
13	The Fokkerâ€“Planck Framework in the Modeling of Pedestriansâ€™ Motion. Modeling and Simulation in Science, Engineering and Technology, 2020, , 111-131.	0.4	6
14	Towards a solution of mean-field control problems using model predictive control. IFAC-PapersOnLine, 2020, 53, 4973-4978.	0.5	5
15	A theoretical investigation of time-dependent Kohnâ€“Sham equations: new proofs. Applicable Analysis, 2019, , 1-20.	0.6	3
16	A theoretical investigation of Brockettâ€™s ensemble optimal control problems. Calculus of Variations and Partial Differential Equations, 2019, 58, 1.	0.9	11
17	On the SQH Scheme to Solve Nonsmooth PDE Optimal Control Problems. Numerical Functional Analysis and Optimization, 2019, 40, 1489-1531.	0.6	7
18	A Sequential Quadratic Hamiltonian Method for Solving Parabolic Optimal Control Problems with Discontinuous Cost Functionals. Journal of Dynamical and Control Systems, 2019, 25, 403-435.	0.4	10

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19	A multigrid scheme for solving convectionâ€“diffusion-integral optimal control problems. Computing and Visualization in Science, 2019, 22, 43-55.	1.2	5
20	Investigation of Optimal Control Problems Governed by a Time-Dependent Kohn-Sham Model. Journal of Dynamical and Control Systems, 2018, 24, 657-679.	0.4	5
21	On the Optimal Control of a Random Walk with Jumps and Barriers. Methodology and Computing in Applied Probability, 2018, 20, 435-462.	0.7	2
22	A Fokkerâ€“Planck approach to control collective motion. Computational Optimization and Applications, 2018, 69, 423-459.	0.9	28
23	A Fokkerâ€“Planck control framework for stochastic systems. EMS Surveys in Mathematical Sciences, 2018, 5, 65-98.	1.5	14
24	A New Optimization Approach to Sparse Reconstruction of Log-Conductivity in Acousto-Electric Tomography. SIAM Journal on Imaging Sciences, 2018, 11, 1759-1784.	1.3	18
25	Dynamics Identification in Evolution Models Using Radial Basis Functions. Journal of Dynamical and Control Systems, 2017, 23, 317-335.	0.4	1
26	Stability and accuracy of a pseudospectral scheme for the Wigner function equation. Numerical Methods for Partial Differential Equations, 2017, 33, 62-87.	2.0	7
27	Optimal control of a system of reaction-diffusion equations modeling the wine fermentation process. Optimal Control Applications and Methods, 2017, 38, 112-132.	1.3	10
28	A COKOSNUT code for the control of the time-dependent Kohnâ€“Sham model. Computer Physics Communications, 2017, 214, 231-238.	3.0	10
29	Proximal schemes for parabolic optimal control problems with sparsity promoting cost functionals. International Journal of Control, 2017, 90, 2349-2367.	1.2	7
30	A Fokker-Planck Based Approach to Control Jump Processes. Mathematics in Industry, 2017, , 423-439.	0.1	1
31	Pedestrian motion modelled by Fokkerâ€“Planck Nash games. Royal Society Open Science, 2017, 4, 170648.	1.1	21
32	Numerical Investigation of a Class of Liouville Control Problems. Journal of Scientific Computing, 2017, 73, 178-202.	1.1	5
33	A Theoretical Investigation of Time-Dependent Kohn--Sham Equations. SIAM Journal on Mathematical Analysis, 2017, 49, 1681-1704.	0.9	9
34	Analysis of splitting methods for solving a partial integro-differential Fokkerâ€“Planck equation. Applied Mathematics and Computation, 2017, 294, 1-17.	1.4	15
35	Paradox of integration â€” mean field approach. International Journal of Modern Physics C, 2017, 28, 1750133.	0.8	2
36	Multigrid Solution of an Elliptic Fredholm Partial Integro-Differential Equation with a Hilbert-Schmidt Integral Operator. Applied Mathematics, 2017, 08, 967-986.	0.1	3

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37	Splitting Methods for Fokker-Planck Equations Related to Jump-Diffusion Processes. Mathematics in Industry, 2017, , 409-422.	0.1	0
38	A fractional Fokker-Planck control framework for subdiffusion processes. Optimal Control Applications and Methods, 2016, 37, 290-304.	1.3	7
39	Stochastic modelling and control of antibiotic subtilin production. Journal of Mathematical Biology, 2016, 73, 727-749.	0.8	4
40	A control theoretical approach to crowd management. Physics of Life Reviews, 2016, 18, 27-28.	1.5	2
41	On the optimal control of random walks. IFAC-PapersOnLine, 2016, 49, 248-253.	0.5	0
42	A Fokkerâ€“Planck Feedback Control-Constrained Approach for Modelling Crowd Motion. Journal of Computational and Theoretical Transport, 2016, 45, 442-458.	0.3	30
43	Quantum Optimal Control Problems with a Sparsity Cost Functional. Numerical Functional Analysis and Optimization, 2016, 37, 938-965.	0.6	10
44	Hermite approximation of a hyperbolic Fokkerâ€“Planck optimality system to control a piecewise-deterministic process. International Journal of Control, 2016, 89, 1382-1395.	1.2	0
45	Development of Real-Time Magnetic Resonance Imaging of Mouse Hearts at 9.4 Teslaâ€” Simulations and First Application. IEEE Transactions on Medical Imaging, 2016, 35, 912-920.	5.4	10
46	A LONE code for the sparse control of quantum systems. Computer Physics Communications, 2016, 200, 312-323.	3.0	9
47	Multigrid Optimization Methods for the Optimal Control of Convectionâ€“Diffusion Problems with Bilinear Control. Journal of Optimization Theory and Applications, 2016, 168, 510-533.	0.8	14
48	On Optimal Sparse-Control Problems Governed by Jump-Diffusion Processes. Applied Mathematics, 2016, 07, 1978-2004.	0.1	4
49	Proximal Methods for Elliptic Optimal Control Problems with Sparsity Cost Functional. Applied Mathematics, 2016, 07, 967-992.	0.1	18
50	On the control of the Heider balance model. European Physical Journal: Special Topics, 2015, 224, 3325-3342.	1.2	24
51	A HERMITE SPECTRAL METHOD FOR A FOKKER-PLANCK OPTIMAL CONTROL PROBLEM IN AN UNBOUNDED DOMAIN. , 2015, 5, 266-254.		3
52	A method for solving exact-controllability problems governed by closed quantum spin systems. International Journal of Control, 2015, 88, 682-702.	1.2	3
53	On the control through leadership of the Hegselmannâ€“Krause opinion formation model. Mathematical Models and Methods in Applied Sciences, 2015, 25, 565-585.	1.7	71
54	Newton Methods for the Optimal Control of Closed Quantum Spin Systems. SIAM Journal of Scientific Computing, 2015, 37, A319-A346.	1.3	22

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55	Preface: Special Issue â€“ Weizmann Workshop 2013. Numerical Mathematics, 2015, 8, i-ii.	0.6	0
56	A FEM-Multigrid Scheme for Elliptic Nash-Equilibrium Multiobjective Optimal Control Problems. Numerical Mathematics, 2015, 8, 253-282.	0.6	0
57	Analysis of the Changâ€“Cooper discretization scheme for a class of Fokkerâ€“Planck equations. Journal of Numerical Mathematics, 2015, 23, .	1.8	35
58	Modeling and control through leadership of a refined flocking system. Mathematical Models and Methods in Applied Sciences, 2015, 25, 255-282.	1.7	57
59	SKRYN: A fast semismooth-Krylovâ€“Newton method for controlling Ising spin systems. Computer Physics Communications, 2015, 190, 213-223.	3.0	4
60	Second-order approximation and fast multigrid solution of parabolic bilinear optimization problems. Advances in Computational Mathematics, 2015, 41, 457-488.	0.8	12
61	Preface: Special Issue â€“ Weizmann Workshop 2013. Numerical Mathematics, 2015, 8, i-ii.	0.6	0
62	Optimal control of a class of piecewise deterministic processes. European Journal of Applied Mathematics, 2014, 25, 1-25.	1.4	9
63	On the Connection between the Hamilton-Jacobi-Bellman and the Fokker-Planck Control Frameworks. Applied Mathematics, 2014, 05, 2476-2484.	0.1	22
64	FOKKERâ€“PLANCK-BASED CONTROL OF A TWO-LEVEL OPEN QUANTUM SYSTEM. Mathematical Models and Methods in Applied Sciences, 2013, 23, 2039-2064.	1.7	8
65	Single-molecule analysis of fluorescently labeled G-proteinâ€“coupled receptors reveals complexes with distinct dynamics and organization. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 743-748.	3.3	394
66	Multigrid Shape Optimization Governed by Elliptic PDEs. SIAM Journal on Control and Optimization, 2013, 51, 1417-1440.	1.1	6
67	A Fokkerâ€“Planck control framework for multidimensional stochastic processes. Journal of Computational and Applied Mathematics, 2013, 237, 487-507.	1.1	94
68	Formulation and Numerical Solution of Nash Equilibrium Multiobjective Elliptic Control Problems. SIAM Journal on Control and Optimization, 2013, 51, 718-744.	1.1	15
69	Fast solvers for simulation, inversion, and control of wave propagation problems. Numerical Linear Algebra With Applications, 2013, 20, 539-540.	0.9	0
70	Parallel algebraic multilevel Schwarz preconditioners for a class of elliptic PDE systems. Computing and Visualization in Science, 2013, 16, 1-14.	1.2	5
71	Multigrid second-order accurate solution of parabolic control-constrained problems. Computational Optimization and Applications, 2012, 51, 835-866.	0.9	11
72	Multigrid Solution of a Lavrentiev-Regularized State-Constrained Parabolic Control Problem. Numerical Mathematics, 2012, 5, 1-18.	0.6	8

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73	Special issue in computing and visualization in science (CVS) related to the European Multigrid conference, EMG 2010. Computing and Visualization in Science, 2011, 14, 1-1.	1.2	0
74	Formulation and multigrid solution of Cauchy-Riemann optimal control problems. Computing and Visualization in Science, 2011, 14, 79-90.	1.2	7
75	Special issue in computing and visualization in science (CVS), related to the European multigrid conference, EMG 2010. Computing and Visualization in Science, 2011, 14, 49-49.	1.2	0
76	A POD framework to determine robust controls in PDE optimization. Computing and Visualization in Science, 2011, 14, 91-103.	1.2	18
77	A full multigrid solution of control-constrained Cauchyâ€“Riemann optimal control problems. Journal of Numerical Mathematics, 2011, 19, .	1.8	2
78	Multigrid and sparse-grid schemes for elliptic control problems with random coefficients. Computing and Visualization in Science, 2010, 13, 153-160.	1.2	17
79	On the treatment of distributed uncertainties in PDEâ€constrained optimization. GAMM Mitteilungen, 2010, 33, 230-246.	2.7	37
80	Phase retrieval in SAR interferograms using diffusion and inpainting. , 2010, , .		7
81	OPTIMAL CONTROL OF PROBABILITY DENSITY FUNCTIONS OF STOCHASTIC PROCESSES. Mathematical Modelling and Analysis, 2010, 15, 393-407.	0.7	58
82	A Globalized Newton Method for the Accurate Solution of a Dipole Quantum Control Problem. SIAM Journal of Scientific Computing, 2010, 31, 4176-4203.	1.3	16
83	Multigrid Methods for Control-Constrained Elliptic Optimal Control Problems. , 2010, , 883-891.		1
84	Implementation and analysis of multigrid schemes with finite elements for elliptic optimal control problems. Computing (Vienna/New York), 2009, 84, 27-48.	3.2	39
85	Robust registration of satellite images with local distortions. , 2009, , .		4
86	Multigrid Methods for PDE Optimization. SIAM Review, 2009, 51, 361-395.	4.2	124
87	Multigrid Methods and Sparse-Grid Collocation Techniques for Parabolic Optimal Control Problems with Random Coefficients. SIAM Journal of Scientific Computing, 2009, 31, 2172-2192.	1.3	45
88	Smoothers for control- and state-constrained optimal control problems. Computing and Visualization in Science, 2008, 11, 59-66.	1.2	16
89	Multigrid optimization methods for linear and bilinear elliptic optimal control problems. Computing (Vienna/New York), 2008, 82, 31-52.	3.2	31
90	A cascadic monotonic time-discretized algorithm for finite-level quantum control computation. Computer Physics Communications, 2008, 178, 393-399.	3.0	8

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91	Formulation and numerical solution of finite-level quantum optimal control problems. Journal of Computational and Applied Mathematics, 2008, 216, 170-197.	1.1	26
92	Multigrid Optimization Schemes for Solving Boseâ€“Einstein Condensate Control Problems. SIAM Journal of Scientific Computing, 2008, 30, 441-462.	1.3	19
93	Computational techniques for a quantum control problem with H ¹ -cost. Inverse Problems, 2008, 24, 034007.	1.0	30
94	Optimal quantum control of Bose-Einstein condensates in magnetic microtraps. Physical Review A, 2007, 75, .	1.0	96
95	High-order discretization and multigrid solution of elliptic nonlinear constrained optimal control problems. Journal of Computational and Applied Mathematics, 2007, 200, 67-85.	1.1	31
96	Distributed optimal control of lambdaâ€“omega systems. Journal of Numerical Mathematics, 2006, 14, .	1.8	23
97	Analysis of a leap-frog pseudospectral scheme for the SchrÃ¶dinger equation. Journal of Computational and Applied Mathematics, 2006, 193, 65-88.	1.1	22
98	Algebraic multigrid methods for solving generalized eigenvalue problems. International Journal for Numerical Methods in Engineering, 2006, 65, 1186-1196.	1.5	17
99	A globalization strategy for the multigrid solution of elliptic optimal control problems. Optimization Methods and Software, 2006, 21, 445-459.	1.6	13
100	Experiences with a space-time multigrid method for the optimal control of a chemical turbulence model. International Journal for Numerical Methods in Fluids, 2005, 47, 879-885.	0.9	16
101	Analysis of Iterative Methods for Solving a Ginzburg-Landau Equation. International Journal of Computer Vision, 2005, 64, 203-219.	10.9	12
102	A Multigrid Scheme for Elliptic Constrained Optimal Control Problems. Computational Optimization and Applications, 2005, 31, 309-333.	0.9	48
103	An efficient algebraic multigrid method for solving optimality systems. Computing and Visualization in Science, 2004, 7, 183-188.	1.2	7
104	On the modeling and simulation of boundary flow through partially open pipe ends. Zeitschrift Fur Angewandte Mathematik Und Physik, 2004, 55, 946-961.	0.7	2
105	Solution of lambda-omega systems: Theta-schemes and multigrid methods. Numerische Mathematik, 2004, 98, 581-606.	0.9	6
106	Numerical investigation of the Liebau phenomenon. Zeitschrift Fur Angewandte Mathematik Und Physik, 2003, 54, 1050-1072.	0.7	54
107	Multigrid methods for parabolic distributed optimal control problems. Journal of Computational and Applied Mathematics, 2003, 157, 365-382.	1.1	64
108	Optimal Control Formulation for Determining Optical Flow. SIAM Journal of Scientific Computing, 2003, 24, 818-847.	1.3	67

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109	An Algebraic Multigrid Method for a Class of Elliptic Differential Systems. SIAM Journal of Scientific Computing, 2003, 25, 302-323.	1.3	8
110	Accuracy and Convergence Properties of the Finite Difference Multigrid Solution of an Optimal Control Optimality System. SIAM Journal on Control and Optimization, 2002, 41, 1477-1497.	1.1	47
111	Optimal quantum control in nanostructures: Theory and application to a generic three-level system. Physical Review A, 2002, 66, .	1.0	49
112	An optimal control approach to optical flow computation. International Journal for Numerical Methods in Fluids, 2002, 40, 231-240.	0.9	17
113	The Numerical Solution of the Steady State Solid Fuel Ignition Model and Its Optimal Control. SIAM Journal of Scientific Computing, 2000, 22, 263-284.	1.3	22
114	Analysis of the Cell Vertex Finite Volume Method for the Cauchy–Riemann Equations. SIAM Journal on Numerical Analysis, 1997, 34, 2043-2062.	1.1	7
115	Multilevel Solution of Cell Vertex Cauchy–Riemann Equations. SIAM Journal of Scientific Computing, 1997, 18, 441-459.	1.3	6
116	On a Multi-Grid Algorithm for the TBA Equations. , 1994, , 143-150.		0
117	A multi-grid method for the resolution of thermodynamic Bethe ansatz equations. Computer Physics Communications, 1993, 75, 118-125.	3.0	1
118	Quantum optimal control using the adjoint method. The Nanoscale Systems: Mathematical Modelingory and Applications, 0, 1, 93-111.	0.3	4
119	Modelling with Ordinary Differential Equations. , 0, , .		12