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	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
2	Multigrid Methods for PDE Optimization. *SIAM Review*, 2009, 51, 361-395.	4.2	124
3	Optimal quantum control of Bose-Einstein condensates in magnetic microtraps. *Physical Review A*, 2007, 75, .	1.0	96
4	A Fokkerâ€"Planck control framework for multidimensional stochastic processes. *Journal of Computational and Applied Mathematics*, 2013, 237, 487-507.	1.1	94
5	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
6	Optimal Control Formulation for Determining Optical Flow. *SIAM Journal of Scientific Computing*, 2003, 24, 818-847.	1.3	67
7	Multigrid methods for parabolic distributed optimal control problems. *Journal of Computational and Applied Mathematics*, 2003, 157, 365-382.	1.1	64
8	OPTIMAL CONTROL OF PROBABILITY DENSITY FUNCTIONS OF STOCHASTIC PROCESSES. *Mathematical Modelling and Analysis*, 2010, 15, 393-407.	0.7	58
9	Modeling and control through leadership of a refined flocking system. *Mathematical Models and Methods in Applied Sciences*, 2015, 25, 255-282.	1.7	57
10	Numerical investigation of the Liebau phenomenon. *Zeitschrift Fur Angewandte Mathematik Und Physik*, 2003, 54, 1050-1072.	0.7	54
11	Optimal quantum control in nanostructures: Theory and application to a generic three-level system. *Physical Review A*, 2002, 66, .	1.0	49
12	A Multigrid Scheme for Elliptic Constrained Optimal Control Problems. *Computational Optimization and Applications*, 2005, 31, 309-333.	0.9	48
13	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
14	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
15	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
16	On the treatment of distributed uncertainties in PDEâ€€constrained optimization. *GAMM Mitteilungen*, 2010, 33, 230-246.	2.7	37
17	Analysis of the Changâ€"Cooper discretization scheme for a class of Fokkerâ€"Planck equations. *Journal of Numerical Mathematics*, 2015, 23, .	1.8	35
18	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

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19	Multigrid optimization methods for linear and bilinear elliptic optimal control problems. Computing (Vienna/New York), 2008, 82, 31-52.	3.2	31
20	Computational techniques for a quantum control problem with H^1 -cost. Inverse Problems, 2008, 24, 034007.	1.0	30
21	A Fokker–Planck Feedback Control-Constrained Approach for Modelling Crowd Motion. Journal of Computational and Theoretical Transport, 2016, 45, 442-458.	0.3	30
22	A Fokker–Planck approach to control collective motion. Computational Optimization and Applications, 2018, 69, 423-459.	0.9	28
23	Formulation and numerical solution of finite-level quantum optimal control problems. Journal of Computational and Applied Mathematics, 2008, 216, 170-197.	1.1	26
24	On the control of the Heider balance model. European Physical Journal: Special Topics, 2015, 224, 3325-3342.	1.2	24
25	Distributed optimal control of lambda–omega systems. Journal of Numerical Mathematics, 2006, 14, .	1.8	23
26	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
27	Analysis of a leap-frog pseudospectral scheme for the Schrödinger equation. Journal of Computational and Applied Mathematics, 2006, 193, 65-88.	1.1	22
28	Newton Methods for the Optimal Control of Closed Quantum Spin Systems. SIAM Journal of Scientific Computing, 2015, 37, A319-A346.	1.3	22
29	On the Connection between the Hamilton-Jacobi-Bellman and the Fokker-Planck Control Frameworks. Applied Mathematics, 2014, 05, 2476-2484.	0.1	22
30	Pedestrian motion modelled by Fokker–Planck Nash games. Royal Society Open Science, 2017, 4, 170648.	1.1	21
31	Multigrid Optimization Schemes for Solving Bose–Einstein Condensate Control Problems. SIAM Journal of Scientific Computing, 2008, 30, 441-462.	1.3	19
32	A POD framework to determine robust controls in PDE optimization. Computing and Visualization in Science, 2011, 14, 91-103.	1.2	18
33	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
34	Proximal Methods for Elliptic Optimal Control Problems with Sparsity Cost Functional. Applied Mathematics, 2016, 07, 967-992.	0.1	18
35	An optimal control approach to optical flow computation. International Journal for Numerical Methods in Fluids, 2002, 40, 231-240.	0.9	17
36	Algebraic multigrid methods for solving generalized eigenvalue problems. International Journal for Numerical Methods in Engineering, 2006, 65, 1186-1196.	1.5	17

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37	Multigrid and sparse-grid schemes for elliptic control problems with random coefficients. Computing and Visualization in Science, 2010, 13, 153-160.	1.2	17
38	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
39	Smoothers for control- and state-constrained optimal control problems. Computing and Visualization in Science, 2008, 11, 59-66.	1.2	16
40	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
41	Formulation and Numerical Solution of Nash Equilibrium Multiobjective Elliptic Control Problems. SIAM Journal on Control and Optimization, 2013, 51, 718-744.	1.1	15
42	Analysis of splitting methods for solving a partial integro-differential Fokkerâ€"Planck equation. Applied Mathematics and Computation, 2017, 294, 1-17.	1.4	15
43	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
44	A Fokkerâ€"Planck control framework for stochastic systems. EMS Surveys in Mathematical Sciences, 2018, 5, 65-98.	1.5	14
45	A globalization strategy for the multigrid solution of elliptic optimal control problems. Optimization Methods and Software, 2006, 21, 445-459.	1.6	13
46	Analysis of Iterative Methods for Solving a Ginzburg-Landau Equation. International Journal of Computer Vision, 2005, 64, 203-219.	10.9	12
47	Second-order approximation and fast multigrid solution of parabolic bilinear optimization problems. Advances in Computational Mathematics, 2015, 41, 457-488.	0.8	12
48	Modelling with Ordinary Differential Equations. , 0, , .		12
49	Multigrid second-order accurate solution of parabolic control-constrained problems. Computational Optimization and Applications, 2012, 51, 835-866.	0.9	11
50	A theoretical investigation of Brockettâ€™s ensemble optimal control problems. Calculus of Variations and Partial Differential Equations, 2019, 58, 1.	0.9	11
51	The Pontryagin maximum principle for solving Fokkerâ€"Planck optimal control problems. Computational Optimization and Applications, 2020, 76, 499-533.	0.9	11
52	Quantum Optimal Control Problems with a Sparsity Cost Functional. Numerical Functional Analysis and Optimization, 2016, 37, 938-965.	0.6	10
53	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
54	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

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55	A COKOSNUT code for the control of the time-dependent Kohn–Sham model. Computer Physics Communications, 2017, 214, 231-238.	3.0	10
56	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
57	Optimal control of a class of piecewise deterministic processes. European Journal of Applied Mathematics, 2014, 25, 1-25.	1.4	9
58	A LONE code for the sparse control of quantum systems. Computer Physics Communications, 2016, 200, 312-323.	3.0	9
59	A Theoretical Investigation of Time-Dependent Kohn--Sham Equations. SIAM Journal on Mathematical Analysis, 2017, 49, 1681-1704.	0.9	9
60	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
61	An Algebraic Multigrid Method for a Class of Elliptic Differential Systems. SIAM Journal of Scientific Computing, 2003, 25, 302-323.	1.3	8
62	A cascadic monotonic time-discretized algorithm for finite-level quantum control computation. Computer Physics Communications, 2008, 178, 393-399.	3.0	8
63	FOKKER–PLANCK-BASED CONTROL OF A TWO-LEVEL OPEN QUANTUM SYSTEM. Mathematical Models and Methods in Applied Sciences, 2013, 23, 2039-2064.	1.7	8
64	Multigrid Solution of a Lavrentiev-Regularized State-Constrained Parabolic Control Problem. Numerical Mathematics, 2012, 5, 1-18.	0.6	8
65	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
66	An efficient algebraic multigrid method for solving optimality systems. Computing and Visualization in Science, 2004, 7, 183-188.	1.2	7
67	Phase retrieval in SAR interferograms using diffusion and inpainting. , 2010, , .		7
68	Formulation and multigrid solution of Cauchy-Riemann optimal control problems. Computing and Visualization in Science, 2011, 14, 79-90.	1.2	7
69	A fractional Fokker-Planck control framework for subdiffusion processes. Optimal Control Applications and Methods, 2016, 37, 290-304.	1.3	7
70	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
71	Proximal schemes for parabolic optimal control problems with sparsity promoting cost functionals. International Journal of Control, 2017, 90, 2349-2367.	1.2	7
72	On the SQH Scheme to Solve Nonsmooth PDE Optimal Control Problems. Numerical Functional Analysis and Optimization, 2019, 40, 1489-1531.	0.6	7

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73	Multilevel Solution of Cell Vertex Cauchy--Riemann Equations. SIAM Journal of Scientific Computing, 1997, 18, 441-459.	1.3	6
74	Solution of lambda-omega systems: Theta-schemes and multigrid methods. Numerische Mathematik, 2004, 98, 581-606.	0.9	6
75	Multigrid Shape Optimization Governed by Elliptic PDEs. SIAM Journal on Control and Optimization, 2013, 51, 1417-1440.	1.1	6
76	The Fokker–Planck Framework in the Modeling of Pedestrians' Motion. Modeling and Simulation in Science, Engineering and Technology, 2020, , 111-131.	0.4	6
77	Parallel algebraic multilevel Schwarz preconditioners for a class of elliptic PDE systems. Computing and Visualization in Science, 2013, 16, 1-14.	1.2	5
78	Numerical Investigation of a Class of Liouville Control Problems. Journal of Scientific Computing, 2017, 73, 178-202.	1.1	5
79	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
80	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
81	A numerical investigation of Brockett's ensemble optimal control problems. Numerische Mathematik, 2021, 149, 1-42.	0.9	5
82	A multigrid scheme for solving convection–diffusion-integral optimal control problems. Computing and Visualization in Science, 2019, 22, 43-55.	1.2	5
83	Towards a solution of mean-field control problems using model predictive control. IFAC-PapersOnLine, 2020, 53, 4973-4978.	0.5	5
84	A sequential quadratic hamiltonian algorithm for training explicit RK neural networks. Journal of Computational and Applied Mathematics, 2022, 405, 113943.	1.1	5
85	Robust registration of satellite images with local distortions. , 2009, , .		4
86	Quantum optimal control using the adjoint method. The Nanoscale Systems: Mathematical Modelingory and Applications, 0, 1, 93-111.	0.3	4
87	SKRYN: A fast semismooth-Krylov–Newton method for controlling Ising spin systems. Computer Physics Communications, 2015, 190, 213-223.	3.0	4
88	Stochastic modelling and control of antibiotic subtilin production. Journal of Mathematical Biology, 2016, 73, 727-749.	0.8	4
89	A Fokker--Planck Approach to the Reconstruction of a Cell Membrane Potential. SIAM Journal of Scientific Computing, 2021, 43, B623-B649.	1.3	4
90	On Optimal Sparse-Control Problems Governed by Jump-Diffusion Processes. Applied Mathematics, 2016, 07, 1978-2004.	0.1	4

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91	A HERMITE SPECTRAL METHOD FOR A FOKKER-PLANCK OPTIMAL CONTROL PROBLEM IN AN UNBOUNDED DOMAIN. , 2015, 5, 266-254.		3
92	A method for solving exact-controllability problems governed by closed quantum spin systems. International Journal of Control, 2015, 88, 682-702.	1.2	3
93	A theoretical investigation of time-dependent Kohn–Sham equations: new proofs. Applicable Analysis, 2019, , 1-20.	0.6	3
94	Nash Equilibria and Bargaining Solutions of Differential Bilinear Games. Dynamic Games and Applications, 2021, 11, 1-28.	1.1	3
95	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
96	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
97	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
98	A full multigrid solution of control-constrained Cauchy–Riemann optimal control problems. Journal of Numerical Mathematics, 2011, 19, .	1.8	2
99	A control theoretical approach to crowd management. Physics of Life Reviews, 2016, 18, 27-28.	1.5	2
100	Paradox of integration – mean field approach. International Journal of Modern Physics C, 2017, 28, 1750133.	0.8	2
101	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
102	Ecosystem models and social balance from a synchronization perspective. International Journal of Modern Physics C, 2022, 33, .	0.8	2
103	A multi-grid method for the resolution of thermodynamic Bethe ansatz equations. Computer Physics Communications, 1993, 75, 118-125.	3.0	1
104	Dynamics Identification in Evolution Models Using Radial Basis Functions. Journal of Dynamical and Control Systems, 2017, 23, 317-335.	0.4	1
105	A Fokker-Planck Based Approach to Control Jump Processes. Mathematics in Industry, 2017, , 423-439.	0.1	1
106	On the SQH Method for Solving Differential Nash Games. Journal of Dynamical and Control Systems, 2022, 28, 739-755.	0.4	1
107	Multigrid Methods for Control-Constrained Elliptic Optimal Control Problems. , 2010, , 883-891.		1
108	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

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109	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
110	Fast solvers for simulation, inversion, and control of wave propagation problems. Numerical Linear Algebra With Applications, 2013, 20, 539-540.	0.9	0
111	Preface: <i>Special Issue â€" Weizmann Workshop 2013</i>. Numerical Mathematics, 2015, 8, i-ii.	0.6	0
112	A FEM-Multigrid Scheme for Elliptic Nash-Equilibrium Multiobjective Optimal Control Problems. Numerical Mathematics, 2015, 8, 253-282.	0.6	0
113	On the optimal control of random walks. IFAC-PapersOnLine, 2016, 49, 248-253.	0.5	0
114	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
115	Hierarchicalâ€matrix method for a class of diffusionâ€dominated partial integroâ€differential equations. Numerical Linear Algebra With Applications, 2022, 29, e2410.	0.9	0
116	A sequential quadratic Hamiltonian scheme to compute optimal relaxed controls. ESAIM - Control, Optimisation and Calculus of Variations, 2021, 27, 49.	0.7	0
117	On a Multi-Grid Algorithm for the TBA Equations. , 1994, , 143-150.		0
118	Preface: Special Issue â€" Weizmann Workshop 2013. Numerical Mathematics, 2015, 8, i-ii.	0.6	0
119	Splitting Methods for Fokker-Planck Equations Related to Jump-Diffusion Processes. Mathematics in Industry, 2017, , 409-422.	0.1	0