

Emmanuel TrÃ©lat

List of Publications by Year in descending order

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130
papers

2,792
citations

186265

28
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214800

47
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136
all docs

136
docs citations

136
times ranked

1183
citing authors

#	ARTICLE	IF	CITATIONS
1	Proportional Integral Regulation Control of a One-Dimensional Semilinear Wave Equation. SIAM Journal on Control and Optimization, 2022, 60, 1-21.	2.1	5
2	Optimization of vaccination for COVID-19 in the midst of a pandemic. Networks and Heterogeneous Media, 2022, 17, 443.	1.1	7
3	Constructive Exact Control of Semilinear 1D Wave Equations by a Least-Squares Approach. SIAM Journal on Control and Optimization, 2022, 60, 652-673.	2.1	3
4	Exponential Convergence Towards Consensus for Non-Symmetric Linear First-Order Systems in Finite and Infinite Dimensions. SIAM Journal on Mathematical Analysis, 2022, 54, 2727-2752.	1.9	2
5	Controlling Swarms toward Flocks and Mills. SIAM Journal on Control and Optimization, 2022, 60, 1863-1891.	2.1	2
6	PI Regulation of a Reaction-Diffusion Equation With Delayed Boundary Control. IEEE Transactions on Automatic Control, 2021, 66, 1573-1587.	5.7	24
7	Nonnegative control of finite-dimensional linear systems. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2021, 38, 301-346.	1.4	5
8	Preface: A tribute to Professor Enrique Zuazua on his 60th birthday. ESAIM - Control, Optimisation and Calculus of Variations, 2021, 27, E2.	1.3	0
9	Unified Riccati Theory for Optimal Permanent and Sampled-Data Control Problems in Finite and Infinite Time Horizons. SIAM Journal on Control and Optimization, 2021, 59, 489-508.	2.1	3
10	Robustness under control sampling of reachability in fixed time for nonlinear control systems. Mathematics of Control, Signals, and Systems, 2021, 33, 515-551.	2.3	0
11	Pace and motor control optimization for a runner. Journal of Mathematical Biology, 2021, 83, 9.	1.9	4
12	Control of COVID-19 outbreak using an extended SEIR model. Mathematical Models and Methods in Applied Sciences, 2021, 31, 2399-2424.	3.3	15
13	Two-Sided Space-Time L^1 Polynomial Approximation of Hypographs Within Polynomial Optimal Control. Applied Mathematics and Optimization, 2020, 82, 307-352.	1.6	0
14	Optimal Control of Endoatmospheric Launch Vehicle Systems: Geometric and Computational Issues. IEEE Transactions on Automatic Control, 2020, 65, 2418-2433.	5.7	15
15	Characterization by observability inequalities of controllability and stabilization properties. Pure and Applied Analysis, 2020, 2, 93-122.	1.1	16
16	How to build a new athletic track to break records. Royal Society Open Science, 2020, 7, 200007.	2.4	7
17	Shape turnpike for linear parabolic PDE models. Systems and Control Letters, 2020, 142, 104733.	2.3	10
18	Neumann trace tracking of a constant reference input for 1-D boundary controlled heat-like equations with delay. IFAC-PapersOnLine, 2020, 53, 7716-7721.	0.9	0

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19	Feedback Stabilization of a 1-D Linear Reaction-Diffusion Equation With Delay Boundary Control. IEEE Transactions on Automatic Control, 2019, 64, 1415-1425.	5.7	72
20	Sparse Control of Hegselmann-Krause Models: Black Hole and Declustering. SIAM Journal on Control and Optimization, 2019, 57, 2628-2659.	2.1	24
21	Observability properties of the homogeneous wave equation on a closed manifold. Communications in Partial Differential Equations, 2019, 44, 749-772.	2.2	4
22	Continuity of Pontryagin Extremals with Respect to Delays in Nonlinear Optimal Control. SIAM Journal on Control and Optimization, 2019, 57, 1440-1466.	2.1	3
23	Phase portrait control for 1D monostable and bistable reaction-diffusion equations. Nonlinearity, 2019, 32, 884-909.	1.4	15
24	Spectral shape optimization for the Neumann traces of the Dirichlet-Laplacian eigenfunctions. Calculus of Variations and Partial Differential Equations, 2019, 58, 1.	1.7	3
25	Redundancy implies robustness for bang-bang strategies. Optimal Control Applications and Methods, 2019, 40, 85-104.	2.1	0
26	Regularization of Chattering Phenomena via Bounded Variation Controls. IEEE Transactions on Automatic Control, 2018, 63, 2046-2060.	5.7	19
27	New formulation of predictors for finite-dimensional linear control systems with input delay. Systems and Control Letters, 2018, 113, 9-16.	2.3	23
28	Transfer Between Invariant Manifolds: From Impulse Transfer to Low-Thrust Transfer. Journal of Guidance, Control, and Dynamics, 2018, 41, 658-672.	2.8	9
29	Integral and measure-turnstile properties for infinite-dimensional optimal control systems. Mathematics of Control, Signals, and Systems, 2018, 30, 1.	2.3	32
30	Steady-State and Periodic Exponential Turnpike Property for Optimal Control Problems in Hilbert Spaces. SIAM Journal on Control and Optimization, 2018, 56, 1222-1252.	2.1	46
31	Minimal time spiking in various ChR2-controlled neuron models. Journal of Mathematical Biology, 2018, 76, 567-608.	1.9	5
32	Spectral asymptotics for sub-Riemannian Laplacians, I: Quantum ergodicity and quantum limits in the 3-dimensional contact case. Duke Mathematical Journal, 2018, 167, .	1.5	19
33	Asymptotic analysis and optimal control of an integro-differential system modelling healthy and cancer cells exposed to chemotherapy. Journal Des Mathematiques Pures Et Appliquees, 2018, 116, 268-308.	1.6	54
34	Sparse control to prevent Black Swan clustering in collective dynamics. , 2018, , .		0
35	Variational Methods for Tomographic Reconstruction with Few Views. Milan Journal of Mathematics, 2018, 86, 157-200.	1.1	4
36	Global stability with selection in integro-differential Lotka-Volterra systems modelling trait-structured populations. Journal of Biological Dynamics, 2018, 12, 872-893.	1.7	11

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37	Solving chance constrained optimal control problems in aerospace via kernel density estimation. <i>Optimal Control Applications and Methods</i> , 2018, 39, 1833-1858.	2.1	17
38	Minimal controllability time for finite-dimensional control systems under state constraints. <i>Automatica</i> , 2018, 96, 380-392.	5.0	12
39	Allee optimal control of a system in ecology. <i>Mathematical Models and Methods in Applied Sciences</i> , 2018, 28, 1665-1697.	3.3	16
40	Value function for regional control problems via dynamic programming and Pontryagin maximum principle. <i>Mathematical Control and Related Fields</i> , 2018, 8, 509-533.	1.1	4
41	Convergence to consensus of the general finite-dimensional Cucker-Smale model with time-varying delays. <i>Communications in Mathematical Sciences</i> , 2018, 16, 2053-2076.	1.0	39
42	Linear-quadratic optimal sampled-data control problems: Convergence result and Riccati theory. <i>Automatica</i> , 2017, 79, 273-281.	5.0	15
43	Interaction Network, State Space, and Control in Social Dynamics. <i>Modeling and Simulation in Science, Engineering and Technology</i> , 2017, , 99-140.	0.6	21
44	Low-thrust Lyapunov to Lyapunov and Halo to Halo missions with L^2 -minimization. <i>ESAIM: Mathematical Modelling and Numerical Analysis</i> , 2017, 51, 965-996.	1.9	7
45	Nonlinear damped partial differential equations and their uniform discretizations. <i>Journal of Functional Analysis</i> , 2017, 273, 352-403.	1.4	19
46	Geometric control condition for the wave equation with a time-dependent observation domain. <i>Analysis and PDE</i> , 2017, 10, 983-1015.	1.4	29
47	Actuator Design for Parabolic Distributed Parameter Systems with the Moment Method. <i>SIAM Journal on Control and Optimization</i> , 2017, 55, 1128-1152.	2.1	17
48	Sparse Jurdjević-Quinn stabilization of dissipative systems. <i>Automatica</i> , 2017, 86, 110-120.	5.0	10
49	Minimal controllability time for the heat equation under unilateral state or control constraints. <i>Mathematical Models and Methods in Applied Sciences</i> , 2017, 27, 1587-1644.	3.3	31
50	Solving optimal control problems for delayed control-affine systems with quadratic cost by numerical continuation. , 2017, , .		6
51	Mean-field sparse Jurdjević-Quinn control. <i>Mathematical Models and Methods in Applied Sciences</i> , 2017, 27, 1223-1253.	3.3	20
52	Analytical Initialization of a Continuation-Based Indirect Method for Optimal Control of Endo-Atmospheric Launch Vehicle Systems. <i>IFAC-PapersOnLine</i> , 2017, 50, 482-487.	0.9	9
53	Geometric optimal control and applications to aerospace. <i>Pacific Journal of Mathematics for Industry</i> , 2017, 9, .	0.7	14
54	SUB-RIEMANNIAN STRUCTURES ON GROUPS OF DIFFEOMORPHISMS. <i>Journal of the Institute of Mathematics of Jussieu</i> , 2017, 16, 745-785.	0.7	8

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55	Optimal control of infinite-dimensional piecewise deterministic Markov processes and application to the control of neuronal dynamics via Optogenetics. <i>Networks and Heterogeneous Media</i> , 2017, 12, 417-459.	1.1	3
56	Optimal observability of the multi-dimensional wave and Schrödinger equations in quantum ergodic domains. <i>Journal of the European Mathematical Society</i> , 2016, 18, 1043-1111.	1.4	24
57	On sharpness of the local Kato-smoothing property for dispersive wave equations. <i>Proceedings of the American Mathematical Society</i> , 2016, 145, 653-664.	0.8	3
58	Sparse kinetic Jurdjevic-Quinn control for mean-field equations. , 2016, , .		0
59	Sparse feedback stabilization of multi-agent dynamics. , 2016, , .		7
60	Phenotype heterogeneity in cancer cell populations. <i>AIP Conference Proceedings</i> , 2016, , .	0.4	0
61	Randomised observation, control and stabilization of waves. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2016, 96, 538-549.	1.6	3
62	Impulse and Sampled-Data Optimal Control of Heat Equations, and Error Estimates. <i>SIAM Journal on Control and Optimization</i> , 2016, 54, 2787-2819.	2.1	14
63	Registration of Multiple Shapes using Constrained Optimal Control. <i>SIAM Journal on Imaging Sciences</i> , 2016, 9, 344-385.	2.2	9
64	Optimal Neumann control for the 1D wave equation: Finite horizon, infinite horizon, boundary tracking terms and the turnpike property. <i>Systems and Control Letters</i> , 2016, 90, 61-70.	2.3	48
65	Minimum Time Control of the Rocket Attitude Reorientation Associated with Orbit Dynamics. <i>SIAM Journal on Control and Optimization</i> , 2016, 54, 391-422.	2.1	16
66	Planar tilting maneuver of a spacecraft: Singular arcs in the minimum time problem and chattering. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2016, 21, 1347-1388.	0.9	15
67	Optimal sampled-data control, and generalizations on time scales. <i>Mathematical Control and Related Fields</i> , 2016, 6, 53-94.	1.1	25
68	Pontryagin maximum principle for optimal sampled-data control problems. <i>IFAC-PapersOnLine</i> , 2015, 48, 80-84.	0.9	10
69	Control of the 1D continuous version of the Cucker-Smale model. , 2015, , .		1
70	Complexity and regularity of maximal energy domains for the wave equation with fixed initial data. <i>Discrete and Continuous Dynamical Systems</i> , 2015, 35, 6133-6153.	0.9	14
71	Shape deformation analysis from the optimal control viewpoint. <i>Journal Des Mathematiques Pures Et Appliquees</i> , 2015, 104, 139-178.	1.6	42
72	Control to Flocking of the Kinetic Cucker-Smale Model. <i>SIAM Journal on Mathematical Analysis</i> , 2015, 47, 4685-4719.	1.9	70

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73	Sparse stabilization and control of alignment models. Mathematical Models and Methods in Applied Sciences, 2015, 25, 521-564.	3.3	83
74	Optimal Shape and Location of Sensors for Parabolic Equations with Random Initial Data. Archive for Rational Mechanics and Analysis, 2015, 216, 921-981.	2.4	45
75	Control and stabilization of steady-states in a finite-length ferromagnetic nanowire. ESAIM - Control, Optimisation and Calculus of Variations, 2015, 21, 301-323.	1.3	0
76	The turnpike property in finite-dimensional nonlinear optimal control. Journal of Differential Equations, 2015, 258, 81-114.	2.2	142
77	High order variational integrators in the optimal control of mechanical systems. Discrete and Continuous Dynamical Systems, 2015, 35, 4193-4223.	0.9	17
78	Optimal design of sensors for a damped wave equation. , 2015, , .		2
79	Optimal design of boundary observers for the wave equation. ESAIM Proceedings and Surveys, 2014, 45, 475-484.	0.4	0
80	Shape deformation and optimal control. ESAIM Proceedings and Surveys, 2014, 45, 300-307.	0.4	3
81	General Cauchyâ€“Lipschitz theory for \hat{P} -Cauchy problems with CarathÃ©odory dynamics on time scales. Journal of Difference Equations and Applications, 2014, 20, 526-547.	1.1	9
82	Optimal shape and location of sensors or actuators in PDE models. , 2014, , .		1
83	Optimal Observation of the One-dimensional Wave Equation. Journal of Fourier Analysis and Applications, 2013, 19, 514-544.	1.0	42
84	Pontryagin Maximum Principle for Finite Dimensional Nonlinear Optimal Control Problems on Time Scales. SIAM Journal on Control and Optimization, 2013, 51, 3781-3813.	2.1	36
85	Optimal location of controllers for the one-dimensional wave equation. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2013, 30, 1097-1126.	1.4	40
86	Sparse stabilization and optimal control of the Cucker-Smale model. Mathematical Control and Related Fields, 2013, 3, 447-466.	1.1	79
87	Optimal Control and Applications to Aerospace: Some Results and Challenges. Journal of Optimization Theory and Applications, 2012, 154, 713-758.	1.5	149
88	Stability properties of steady-states for a network of ferromagnetic nanowires. Journal of Differential Equations, 2012, 253, 1709-1728.	2.2	12
89	Continuation from a flat to a round Earth model in the coplanar orbit transfer problem. Optimal Control Applications and Methods, 2012, 33, 654-675.	2.1	21
90	On the best observation of wave and SchrÃ¶dinger equations in quantum ergodic billiards. JournÃ©es Equations Aux DÃ©rivÃ©es Partielles, 2012, , 1-13.	0.2	5

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91	Eight-shaped Lissajous orbits in the Earth-Moon system. <i>Mathematics in Action</i> , 2011, 4, 1-23.	0.6	13
92	A variational method using fractional order Hilbert spaces for tomographic reconstruction of blurred and noised binary images. <i>Journal of Functional Analysis</i> , 2010, 259, 2296-2332.	1.4	15
93	Asymptotic approach on conjugate points for minimal time bang-bang controls. <i>Systems and Control Letters</i> , 2010, 59, 720-733.	2.3	8
94	Smooth Regularization of Bang-Bang Optimal Control Problems. <i>IEEE Transactions on Automatic Control</i> , 2010, 55, 2488-2499.	5.7	55
95	Dynamic practical stabilization of sampled-data linear distributed parameter systems. , 2009, , .		12
96	On the stabilization problem for nonholonomic distributions. <i>Journal of the European Mathematical Society</i> , 2009, 11, 223-255.	1.4	14
97	Numerical Study of Optimal Trajectories with Singular Arcs for an Ariane 5 Launcher. <i>Journal of Guidance, Control, and Dynamics</i> , 2009, 32, 51-55.	2.8	34
98	Smooth control of nanowires by means of a magnetic field. <i>Communications on Pure and Applied Analysis</i> , 2009, 8, 871-879.	0.8	6
99	Singular Arcs in the Generalized Goddard's Problem. <i>Journal of Optimization Theory and Applications</i> , 2008, 139, 439-461.	1.5	46
100	A Penalization Approach for Tomographic Reconstruction of Binary Axially Symmetric Objects. <i>Applied Mathematics and Optimization</i> , 2008, 58, 345-371.	1.6	10
101	Singular Trajectories of Control-Affine Systems. <i>SIAM Journal on Control and Optimization</i> , 2008, 47, 1078-1095.	2.1	61
102	Nonlinear Optimal Control via Occupation Measures and LMI-Relaxations. <i>SIAM Journal on Control and Optimization</i> , 2008, 47, 1643-1666.	2.1	173
103	A Stackelberg Game Approach to Mixed H_2/H_∞ Control. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2008, 41, 3940-3945.	0.4	5
104	Control for fast and stable Laminar-to-High-Reynolds-Numbers transfer in a 2D Navier-Stokes channel flow. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2008, 10, 925-956.	0.9	38
105	Control of travelling walls in a ferromagnetic nanowire. <i>Discrete and Continuous Dynamical Systems - Series S</i> , 2008, 1, 51-59.	1.1	12
106	Second order optimality conditions in the smooth case and applications in optimal control. <i>ESAIM - Control, Optimisation and Calculus of Variations</i> , 2007, 13, 207-236.	1.3	72
107	Quasi-Optimal Robust Stabilization of Control Systems. <i>SIAM Journal on Control and Optimization</i> , 2006, 45, 1875-1897.	2.1	19
108	Uniform controllability of semidiscrete approximations of parabolic control systems. <i>Systems and Control Letters</i> , 2006, 55, 597-609.	2.3	60

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109	Global subanalytic solutions of Hamiltonâ€™Jacobi type equations. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2006, 23, 363-387.	1.4	16
110	GLOBAL STEADY-STATE STABILIZATION AND CONTROLLABILITY OF 1D SEMILINEAR WAVE EQUATIONS. Communications in Contemporary Mathematics, 2006, 08, 535-567.	1.2	54
111	Controllability of couette flows. Communications on Pure and Applied Analysis, 2006, 5, 201-211.	0.8	12
112	Commande mixte H^2/H^∞ . Une approche par la stratÃ©gie de Stackelberg. Journal Europeen Des Systemes Automatises, 2006, 40, 1113-1139.	0.4	1
113	Morse-Sard type results in sub-Riemannian geometry. Mathematische Annalen, 2005, 332, 145-159.	1.4	70
114	Robust optimal stabilization of the Brockett integrator via a hybrid feedback. Mathematics of Control, Signals, and Systems, 2005, 17, 201-216.	2.3	30
115	OPTIMAL CONTROL OF THE ATMOSPHERIC ARC OF A SPACE SHUTTLE AND NUMERICAL SIMULATIONS WITH MULTIPLE-SHOOTING METHOD. Mathematical Models and Methods in Applied Sciences, 2005, 15, 109-140.	3.3	15
116	Global Steady-State Controllability of One-Dimensional Semilinear Heat Equations. SIAM Journal on Control and Optimization, 2004, 43, 549-569.	2.1	110
117	Solutions sous-analytiques globales de certaines Ã©quations d'Hamiltonâ€™Jacobi. Comptes Rendus Mathematique, 2003, 337, 653-656.	0.3	2
118	Conjugate Times for Smooth Singular Trajectories and Bang-Bang Extremals. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 117-122.	0.4	0
119	Classification of Local Optimal Syntheses for Time Minimal Control Problem with State Constraints. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 177-182.	0.4	0
120	Une approche gÃ©omÃ©trique du contrÃ´le optimal de l'arc atmosphÃ©rique de la navette spatiale. ESAIM - Control, Optimisation and Calculus of Variations, 2002, 7, 179-222.	1.3	10
121	Stratification du secteur anormal dans la sphÃ©re de Martinet de petit rayon. , 2001, , 239-251.		1
122	Non-subanalyticity of sub-Riemannian Martinet spheres. Comptes Rendus Mathematique, 2001, 332, 527-532.	0.5	5
123	The Transcendence Needed to Compute the Sphere and the Wave Front in Martinet SR-Geometry. Journal of Mathematical Sciences, 2001, 103, 686-708.	0.4	2
124	Asymptotics of accessibility sets along an abnormal trajectory. ESAIM - Control, Optimisation and Calculus of Variations, 2001, 6, 387-414.	1.3	10
125	5 Controllability of Partial Differential Equations. , 0, , 171-198.		4
126	Addendum to Pontryaginâ€™s maximum principle for dynamic systems on time scales. Journal of Difference Equations and Applications, 0, , 1-4.	1.1	3

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127	Small-time asymptotics of hypoelliptic heat kernels near the diagonal, nilpotentization and related results. <i>Annales Henri Lebesgue</i> , 0, 4, 897-971.	0.0	7
128	Quantum ergodicity and quantum limits for sub-Riemannian Laplacians. <i>Séminaire Laurent Schwartz "EDP Et Applications"</i> , 0, , 1-17.	0.0	4
129	Geometric and probabilistic results for the observability of the wave equation. <i>Journal De L'Ecole Polytechnique - Mathematiques</i> , 0, 9, 431-461.	0.0	0
130	Optimal control theory and some applications to aerospace problems. , 0, , 707-726.		0