Emmanuel TrÃ©lat

List of Publications by Year
in descending order

130	2,792	186265	214800
papers	citations	28 h-index	47 g-index

136	136	136	1183
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Nonlinear Optimal Control via Occupation Measures and LMI-Relaxations. SIAM Journal on Control and Optimization, 2008, 47, 1643-1666.	2.1	173
2	Optimal Control and Applications to Aerospace: Some Results and Challenges. Journal of Optimization Theory and Applications, 2012, 154, 713-758.	1.5	149
3	The turnpike property in finite-dimensional nonlinear optimal control. Journal of Differential Equations, 2015, 258, 81-114.	2.2	142
4	Global Steady-State Controllability of One-Dimensional Semilinear Heat Equations. SIAM Journal on Control and Optimization, 2004, 43, 549-569.	2.1	110
5	Sparse stabilization and control of alignment models. Mathematical Models and Methods in Applied Sciences, 2015, 25, 521-564.	3.3	83
6	Sparse stabilization and optimal control of the Cucker-Smale model. Mathematical Control and Related Fields, 2013, 3, 447-466.	1.1	79
7	Second order optimality conditions in the smooth case and applications in optimal control. ESAIM - Control, Optimisation and Calculus of Variations, 2007, 13, 207-236.	1.3	72
8	Feedback Stabilization of a 1-D Linear Reactionâ€“Diffusion Equation With Delay Boundary Control. IEEE Transactions on Automatic Control, 2019, 64, 1415-1425.	5.7	72
9	Morse-Sard type results in sub-Riemannian geometry. Mathematische Annalen, 2005, 332, 145-159.	1.4	70
10	Control to Flocking of the Kinetic Cucker–Smale Model. SIAM Journal on Mathematical Analysis, 2015, 47, 4685-4719.	1.9	70
11	Singular Trajectories of Control-Affine Systems. SIAM Journal on Control and Optimization, 2008, 47, 1078-1095.	2.1	61
12	Uniform controllability of semidiscrete approximations of parabolic control systems. Systems and Control Letters, 2006, 55, 597-609.	2.3	60
13	Smooth Regularization of Bang-Bang Optimal Control Problems. IEEE Transactions on Automatic Control, 2010, 55, 2488-2499.	5.7	55
14	GLOBAL STEADY-STATE STABILIZATION AND CONTROLLABILITY OF 1D SEMILINEAR WAVE EQUATIONS. Communications in Contemporary Mathematics, 2006, 08, 535-567.	1.2	54
15	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
16	Optimal Neumann control for the 1D wave equation: Finite horizon, infinite horizon, boundary tracking terms and the turnpike property. Systems and Control Letters, 2016, 90, 61-70.	2.3	48
17	Singular Arcs in the Generalized Goddardâ€™s Problem. Journal of Optimization Theory and Applications, 2008, 139, 439-461.	1.5	46
18	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

#	Article	IF	Citations
19	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
20	Optimal Observation of the One-dimensional Wave Equation. Journal of Fourier Analysis and Applications, 2013, 19, 514-544.	1.0	42
21	Shape deformation analysis from the optimal control viewpoint. Journal Des Mathematiques Pures Et Appliquees, 2015, 104, 139-178.	1.6	42
22	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
23	Convergence to consensus of the general finite-dimensional Cuckerâ€“Smale model with time-varying delays. Communications in Mathematical Sciences, 2018, 16, 2053-2076.	1.0	39
24	Control for fast and stable Laminar-to-High-Reynolds-Numbers transfer in a 2D Navier-Stokes channel flow. Discrete and Continuous Dynamical Systems - Series B, 2008, 10, 925-956.	0.9	38
25	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
26	Numerical Study of Optimal Trajectories with Singular Arcs for an Ariane 5 Launcher. Journal of Guidance, Control, and Dynamics, 2009, 32, 51-55.	2.8	34
27	Integral and measure-turnpike properties for infinite-dimensional optimal control systems. Mathematics of Control, Signals, and Systems, 2018, 30, 1.	2.3	32
28	Minimal controllability time for the heat equation under unilateral state or control constraints. Mathematical Models and Methods in Applied Sciences, 2017, 27, 1587-1644.	3.3	31
29	Robust optimal stabilization of the Brockett integrator via a hybrid feedback. Mathematics of Control, Signals, and Systems, 2005, 17, 201-216.	2.3	30
30	Geometric control condition for the wave equation with a time-dependent observation domain. Analysis and PDE, 2017, 10, 983-1015.	1.4	29
31	Optimal sampled-data control, and generalizations on time scales. Mathematical Control and Related Fields, 2016, 6, 53-94.	1.1	25
32	Optimal observability of the multi-dimensional wave and SchrÃ¶dinger equations in quantum ergodic domains. Journal of the European Mathematical Society, 2016, 18, 1043-1111.	1.4	24
33	Sparse Control of Hegselmann--Krause Models: Black Hole and Declustering. SIAM Journal on Control and Optimization, 2019, 57, 2628-2659.	2.1	24
34	PI Regulation of a Reactionâ€“Diffusion Equation With Delayed Boundary Control. IEEE Transactions on Automatic Control, 2021, 66, 1573-1587.	5.7	24
35	New formulation of predictors for finite-dimensional linear control systems with input delay. Systems and Control Letters, 2018, 113, 9-16.	2.3	23
36	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

#	Article	IF	Citations
37	Interaction Network, State Space, and Control in Social Dynamics. Modeling and Simulation in Science, Engineering and Technology, 2017, , 99-140.	0.6	21
38	Mean-field sparse Jurdjevicâ€“Quinn control. Mathematical Models and Methods in Applied Sciences, 2017, 27, 1223-1253.	3.3	20
39	Quasiâ€Optimal Robust Stabilization of Control Systems. SIAM Journal on Control and Optimization, 2006, 45, 1875-1897.	2.1	19
40	Nonlinear damped partial differential equations and their uniform discretizations. Journal of Functional Analysis, 2017, 273, 352-403.	1.4	19
41	Regularization of Chattering Phenomena via Bounded Variation Controls. IEEE Transactions on Automatic Control, 2018, 63, 2046-2060.	5.7	19
42	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
43	Actuator Design for Parabolic Distributed Parameter Systems with the Moment Method. SIAM Journal on Control and Optimization, 2017, 55, 1128-1152.	2.1	17
44	Solving chance constrained optimal control problems in aerospace via kernel density estimation. Optimal Control Applications and Methods, 2018, 39, 1833-1858.	2.1	17
45	High order variational integrators in the optimal control of mechanical systems. Discrete and Continuous Dynamical Systems, 2015, 35, 4193-4223.	0.9	17
46	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
47	Minimum Time Control of the Rocket Attitude Reorientation Associated with Orbit Dynamics. SIAM Journal on Control and Optimization, 2016, 54, 391-422.	2.1	16
48	Allee optimal control of a system in ecology. Mathematical Models and Methods in Applied Sciences, 2018, 28, 1665-1697.	3.3	16
49	Characterization by observability inequalities of controllability and stabilization properties. Pure and Applied Analysis, 2020, 2, 93-122.	1.1	16
50	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
51	A variational method using fractional order Hilbert spaces for tomographic reconstruction of blurred and noised binary images. Journal of Functional Analysis, 2010, 259, 2296-2332.	1.4	15
52	Linearâ€“quadratic optimal sampled-data control problems: Convergence result and Riccati theory. Automatica, 2017, 79, 273-281.	5.0	15
53	Phase portrait control for 1D monostable and bistable reactionâ€“diffusion equations. Nonlinearity, 2019, 32, 884-909.	1.4	15
54	Optimal Control of Endoatmospheric Launch Vehicle Systems: Geometric and Computational Issues. IEEE Transactions on Automatic Control, 2020, 65, 2418-2433.	5.7	15

#	Article	IF	Citations
55	Planar tilting maneuver of a spacecraft: Singular arcs in the minimum time problem and chattering. Discrete and Continuous Dynamical Systems - Series B, 2016, 21, 1347-1388.	0.9	15
56	Control of COVID-19 outbreak using an extended SEIR model. Mathematical Models and Methods in Applied Sciences, 2021, 31, 2399-2424.	3.3	15
57	On the stabilization problem for nonholonomic distributions. Journal of the European Mathematical Society, 2009, 11, 223-255.	1.4	14
58	Complexity and regularity of maximal energy domains for the wave equation with fixed initial data. Discrete and Continuous Dynamical Systems, 2015, 35, 6133-6153.	0.9	14
59	Impulse and Sampled-Data Optimal Control of Heat Equations, and Error Estimates. SIAM Journal on Control and Optimization, 2016, 54, 2787-2819.	2.1	14
60	Geometric optimal control and applications to aerospace. Pacific Journal of Mathematics for Industry, 2017, 9, .	0.7	14
61	Eight-shaped Lissajous orbits in the Earth-Moon system. MathematicS in Action, 2011, 4, 1-23.	0.6	13
62	Dynamic practical stabilization of sampled-data linear distributed parameter systems. , 2009, , .		12
63	Stability properties of steady-states for a network of ferromagnetic nanowires. Journal of Differential Equations, 2012, 253, 1709-1728.	2.2	12
64	Minimal controllability time for finite-dimensional control systems under state constraints. Automatica, 2018, 96, 380-392.	5.0	12
65	Controllability of couette flows. Communications on Pure and Applied Analysis, 2006, 5, 201-211.	0.8	12
66	Control of travelling walls in a ferromagnetic nanowire. Discrete and Continuous Dynamical Systems - Series S, 2008, 1, 51-59.	1.1	12
67	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
68	A Penalization Approach for Tomographic Reconstruction of Binary Axially Symmetric Objects. Applied Mathematics and Optimization, 2008, 58, 345-371.	1.6	10
69	Pontryagin maximum principle for optimal sampled-data control problems. IFAC-PapersOnLine, 2015, 48, 80-84.	0.9	10
70	Sparse Jurdjevicâ€“Quinn stabilization of dissipative systems. Automatica, 2017, 86, 110-120.	5.0	10
71	Shape turnpike for linear parabolic PDE models. Systems and Control Letters, 2020, 142, 104733.	2.3	10
72	Asymptotics of accessibility sets along an abnormal trajectory. ESAIM - Control, Optimisation and Calculus of Variations, 2001, 6, 387-414.	1.3	10

#	Article	IF	Citations
73	Une approche gÃ©omÃ©trique du contrÃ1e optimal de l'arc atmosphÃ©rique de la navette spatiale. ESAIM - Control, Optimisation and Calculus of Variations, 2002, 7, 179-222.	1.3	10
74	General Cauchyâ€“Lipschitz theory for Î”-Cauchy problems with CarathÃ©odory dynamics on time scales. Journal of Difference Equations and Applications, 2014, 20, 526-547.	1.1	9
75	Registration of Multiple Shapes using Constrained Optimal Control. SIAM Journal on Imaging Sciences, 2016, 9, 344-385.	2.2	9
76	Analytical Initialization of a Continuation-Based Indirect Method for Optimal Control of Endo-Atmospheric Launch Vehicle Systems. IFAC-PapersOnLine, 2017, 50, 482-487.	0.9	9
77	Transfer Between Invariant Manifolds: From Impulse Transfer to Low-Thrust Transfer. Journal of Guidance, Control, and Dynamics, 2018, 41, 658-672.	2.8	9
78	Asymptotic approach on conjugate points for minimal time bangâ€“bang controls. Systems and Control Letters, 2010, 59, 720-733.	2.3	8
79	SUB-RIEMANNIAN STRUCTURES ON GROUPS OF DIFFEOMORPHISMS. Journal of the Institute of Mathematics of Jussieu, 2017, 16, 745-785.	0.7	8
80	Sparse feedback stabilization of multi-agent dynamics. , 2016, , .		7
81	Low-thrust Lyapunov to Lyapunov and Halo to Halo missions with L²-minimization. ESAIM: Mathematical Modelling and Numerical Analysis, 2017, 51, 965-996.	1.9	7
82	How to build a new athletic track to break records. Royal Society Open Science, 2020, 7, 200007.	2.4	7
83	Small-time asymptotics of hypoelliptic heat kernels near the diagonal, nilpotentization and related results. Annales Henri Lebesgue, 0, 4, 897-971.	0.0	7
84	Optimization of vaccination for COVID-19 in the midst of a pandemic. Networks and Heterogeneous Media, 2022, 17, 443.	1.1	7
85	Solving optimal control problems for delayed control-affine systems with quadratic cost by numerical continuation. , 2017, , .		6
86	Smooth control of nanowires by means of a magnetic field. Communications on Pure and Applied Analysis, 2009, 8, 871-879.	0.8	6
87	Non-subanalyticity of sub-Riemannian Martinet spheres. Comptes Rendus Mathematique, 2001, 332, 527-532.	0.5	5
88	A Stackelberg Game Approach to Mixed H2 /Hâˆž Control. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2008, 41, 3940-3945.	0.4	5
89	Minimal time spiking in various ChR2-controlled neuron models. Journal of Mathematical Biology, 2018, 76, 567-608.	1.9	5
90	Nonnegative control of finite-dimensional linear systems. Annales De L'Institut Henri Poincare (C) Analyse Non Lineaire, 2021, 38, 301-346.	1.4	5

#	Article	IF	Citations
91	On the best observation of wave and SchrÃ¶dinger equations in quantum ergodic billiards. JournÃ©es Ã‰quations Aux DÃ©rivÃ©es Partielles, 2012, , 1-13.	0.2	5
92	Proportional Integral Regulation Control of a One-Dimensional Semilinear Wave Equation. SIAM Journal on Control and Optimization, 2022, 60, 1-21.	2.1	5
93	5 Controllability of Partial Differential Equations. , 0, , 171-198.		4
94	Variational Methods for Tomographic Reconstruction with Few Views. Milan Journal of Mathematics, 2018, 86, 157-200.	1.1	4
95	Observability properties of the homogeneous wave equation on a closed manifold. Communications in Partial Differential Equations, 2019, 44, 749-772.	2.2	4
96	Pace and motor control optimization for a runner. Journal of Mathematical Biology, 2021, 83, 9.	1.9	4
97	Value function for regional control problems via dynamic programming and Pontryagin maximum principle. Mathematical Control and Related Fields, 2018, 8, 509-533.	1.1	4
98	Quantum ergodicity and quantum limits for sub-Riemannian Laplacians. SÃ©minaire Laurent Schwartz â€” EDP Et Applications, 0, , 1-17.	0.0	4
99	Shape deformation and optimal control. ESAIM Proceedings and Surveys, 2014, 45, 300-307.	0.4	3
100	On sharpness of the local Kato-smoothing property for dispersive wave equations. Proceedings of the American Mathematical Society, 2016, 145, 653-664.	0.8	3
101	Randomised observation, control and stabilization of waves. ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik, 2016, 96, 538-549.	1.6	3
102	Addendum to Pontryaginâ€™s maximum principle for dynamic systems on time scales. Journal of Difference Equations and Applications, 0, , 1-4.	1.1	3
103	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
104	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
105	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
106	Optimal control of infinite-dimensional piecewise deterministic Markov processes and application to the control of neuronal dynamics via Optogenetics. Networks and Heterogeneous Media, 2017, 12, 417-459.	1.1	3
107	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
108	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

#	Article	IF	Citations
109	Solutions sous-analytiques globales de certaines Ã©quations d'Hamiltonâ€“Jacobi. Comptes Rendus Mathematique, 2003, 337, 653-656.	0.3	2
110	Optimal design of sensors for a damped wave equation. , 2015, , .		2
111	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
112	Controlling Swarms toward Flocks and Mills. SIAM Journal on Control and Optimization, 2022, 60, 1863-1891.	2.1	2
113	Stratification du secteur anormal dans la sphÃ¨re de Martinet de petit rayon. , 2001, , 239-251.		1
114	Optimal shape and location of sensors or actuators in PDE models. , 2014, , .		1
115	Control of the 1D continuous version of the Cucker-Smale model. , 2015, , .		1
116	Commande mixte H₂/H_{â^ž}. Une approche par la stratÃ©gie de Stackelberg. Journal Europeen Des Systemes Automatises, 2006, 40, 1113-1139.	0.4	1
117	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
118	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
119	Optimal design of boundary observers for the wave equation. ESAIM Proceedings and Surveys, 2014, 45, 475-484.	0.4	0
120	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
121	Sparse kinetic Jurdjevic-Quinn control for mean-field equations. , 2016, , .		0
122	Phenotype heterogeneity in cancer cell populations. AIP Conference Proceedings, 2016, , .	0.4	0
123	Sparse control to prevent Black Swan clustering in collective dynamics. , 2018, , .		0
124	Redundancy implies robustness for bangâ€bang strategies. Optimal Control Applications and Methods, 2019, 40, 85-104.	2.1	0
125	Two-Sided Spaceâ€“Time $$L^1$$ Polynomial Approximation of Hypographs Within Polynomial Optimal Control. Applied Mathematics and Optimization, 2020, 82, 307-352.	1.6	0
126	Preface: A tribute to Professor Enrique Zuazua on his 60th birthday. ESAIM - Control, Optimisation and Calculus of Variations, 2021, 27, E2.	1.3	0

#	Article	IF	Citations
127	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
128	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
129	Geometric and probabilistic results for theÂobservability of the wave equation. Journal De L'Ecole Polytechnique - Mathematiques, 0, 9, 431-461.	0.0	0
130	Optimal control theory and some applications to aerospace problems. , 0, , 707-726.		0