

# Mario Zanon

## List of Publications by Year in descending order

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78  
papers

1,872  
citations

430874

18  
h-index

377865

34  
g-index

79  
all docs

79  
docs citations

79  
times ranked

1197  
citing authors

#	ARTICLE	IF	CITATIONS
1	From linear to nonlinear MPC: bridging the gap via the real-time iteration. International Journal of Control, 2020, 93, 62-80.	1.9	164
2	Data-Driven Economic NMPC Using Reinforcement Learning. IEEE Transactions on Automatic Control, 2020, 65, 636-648.	5.7	110
3	Autogenerating microsecond solvers for nonlinear MPC: A tutorial using ACADO integrators. Optimal Control Applications and Methods, 2015, 36, 685-704.	2.1	107
4	An auto-generated nonlinear MPC algorithm for real-time obstacle avoidance of ground vehicles. , 2013, , .		102
5	Safe Reinforcement Learning Using Robust MPC. IEEE Transactions on Automatic Control, 2021, 66, 3638-3652.	5.7	96
6	Model Predictive Control of Nonholonomic Mobile Robots Without Stabilizing Constraints and Costs. IEEE Transactions on Control Systems Technology, 2016, 24, 1394-1406.	5.2	86
7	Towards time-optimal race car driving using nonlinear MPC in real-time. , 2014, , .		70
8	Periodic Optimal Control, Dissipativity and MPC. IEEE Transactions on Automatic Control, 2017, 62, 2943-2949.	5.7	55
9	Optimal Coordination of Automated Vehicles at Intersections: Theory and Experiments. IEEE Transactions on Control Systems Technology, 2019, 27, 2510-2525.	5.2	52
10	Day-Ahead Scheduling and Real-Time Economic MPC of CHP Unit in Microgrid With Smart Buildings. IEEE Transactions on Smart Grid, 2019, 10, 1992-2001.	9.0	52
11	Airborne Wind Energy Based on Dual Airfoils. IEEE Transactions on Control Systems Technology, 2013, 21, 1215-1222.	5.2	45
12	Indefinite linear MPC and approximated economic MPC for nonlinear systems. Journal of Process Control, 2014, 24, 1273-1281.	3.3	41
13	A tracking MPC formulation that is locally equivalent to economic MPC. Journal of Process Control, 2016, 45, 30-42.	3.3	41
14	Real-Time Constrained Trajectory Planning and Vehicle Control for Proactive Autonomous Driving With Road Users. , 2019, , .		37
15	A Lyapunov function for periodic economic optimizing Model Predictive Control. , 2013, , .		36
16	Time-optimal race car driving using an online exact hessian based nonlinear MPC algorithm. , 2016, , .		35
17	Economic MPC without terminal constraints: Gradient-correcting end penalties enforce asymptotic stability. Journal of Process Control, 2018, 63, 1-14.	3.3	34
18	Primal decomposition of the optimal coordination of vehicles at traffic intersections. , 2016, , .		31

#	ARTICLE	IF	CITATIONS
19	Practical Reinforcement Learning of Stabilizing Economic MPC. , 2019, , .		30
20	A Robust Scenario MPC Approach for Uncertain Multi-Modal Obstacles. , 2021, 5, 947-952.		29
21	Model Predictive Control of Autonomous Vehicles. Lecture Notes in Control and Information Sciences, 2014, , 41-57.	1.0	27
22	An MIQP-based heuristic for Optimal Coordination of Vehicles at Intersections. , 2018, , .		25
23	Control of Airborne Wind Energy systems based on Nonlinear Model Predictive Control & Moving Horizon Estimation. , 2013, , .		24
24	Nonlinear Moving Horizon Estimation for combined state and friction coefficient estimation in autonomous driving. , 2013, , .		23
25	A Computationally Efficient Model for Pedestrian Motion Prediction. , 2018, , .		23
26	Optimisation-based coordination of connected, automated vehicles at intersections. Vehicle System Dynamics, 2020, 58, 726-747.	3.7	23
27	Distributed Algorithm for Optimal Vehicle Coordination at Traffic Intersections. IFAC-PapersOnLine, 2017, 50, 11577-11582.	0.9	22
28	Energy-Optimal Coordination of Autonomous Vehicles at Intersections. , 2018, , .		22
29	Nonlinear MPC and MHE for Mechanical Multi-Body Systems with Application to Fast Tethered Airplanes. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 86-93.	0.4	21
30	Optimal Control Design for Perturbed Constrained Networked Control Systems. , 2021, 5, 553-558.		21
31	Regulation of Differential Drive Robots using Continuous Time MPC without Stabilizing Constraints or Costs**M.W. Mehrez, G.K.I. Mann, and R.G. Gosine are supported by Natural Sciences and Engineering Research Council of Canada (NSERC), the Research and Development Corporation (RDC), CCORE J.I. Clark Chair, and Memorial University of Newfoundland. M. Zanon and M. Diehl are supported by Research Council KUL; PEV/10/002 Optimization in Engineering Center OPTEC, GOA/10/09 MaNet and GOA/10/11 Global real-time o. IFAC-PapersOnLine, 2015, 48, 129-135.	0.9	19
32	Optimal control of the spatial allocation of COVID-19 vaccines: Italy as a case study. PLoS Computational Biology, 2022, 18, e1010237.	3.2	19
33	Model Predictive Control With Environment Adaptation for Legged Locomotion. IEEE Access, 2021, 9, 145710-145727.	4.2	18
34	Control of Dual-Airfoil Airborne Wind Energy systems based on nonlinear MPC and MHE. , 2014, , .		17
35	On the resource allocation problem in wireless networked control systems. , 2017, , .		17
36	Asymptotic Stability of Economic NMPC: The Importance of Adjoints. IFAC-PapersOnLine, 2018, 51, 157-168.	0.9	17

#	ARTICLE	IF	CITATIONS
37	A Sparsity Preserving Convexification Procedure for Indefinite Quadratic Programs Arising in Direct Optimal Control. <i>SIAM Journal on Optimization</i> , 2017, 27, 2085-2109.	2.0	16
38	Optimal Scheduling of Downlink Communication for a Multi-Agent System With a Central Observation Post. , 2018, 2, 37-42.		16
39	Baumgarte stabilisation over the $SO(3)$ rotation group for control. , 2015, , .		15
40	Distributed control algorithm for vehicle coordination at traffic intersections. , 2018, , .		14
41	Optimal Coordination of Automated Vehicles at Intersections with Turns. , 2019, , .		14
42	TuneMPC—A Tool for Economic Tuning of Tracking (N)MPC Problems. , 2020, 4, 910-915.		13
43	Experimental validation of a semi-distributed sequential quadratic programming method for optimal coordination of automated vehicles at intersections. <i>Optimal Control Applications and Methods</i> , 2020, 41, 1068-1096.	2.1	11
44	Orbit control for a power generating airfoil based on nonlinear MPC. , 2012, , .		10
45	A Parallel Decomposition Scheme for Solving Long-Horizon Optimal Control Problems. , 2019, , .		10
46	Reinforcement Learning based on MPC and the Stochastic Policy Gradient Method. , 2021, , .		10
47	Model Predictive Control of Rigid-Airfoil Airborne Wind Energy Systems. <i>Green Energy and Technology</i> , 2013, , 219-233.	0.6	10
48	Rotational start-up of tethered airplanes based on nonlinear MPC and MHE. , 2013, , .		10
49	A new dissipativity condition for asymptotic stability of discounted economic MPC. <i>Automatica</i> , 2022, 141, 110287.	5.0	10
50	Airborne Wind Energy: Airfoil-Airmass Interaction. <i>IFAC Postprint Volumes IPPV / International Federation of Automatic Control</i> , 2014, 47, 5814-5819.	0.4	9
51	Penalty Functions for Handling Large Deviation of Quadrature States in NMPC. <i>IEEE Transactions on Automatic Control</i> , 2017, 62, 3848-3860.	5.7	9
52	Direct Optimal Control and Model Predictive Control. <i>Lecture Notes in Mathematics</i> , 2017, , 263-382.	0.2	9
53	Numerical Optimal Control With Periodicity Constraints in the Presence of Invariants. <i>IEEE Transactions on Automatic Control</i> , 2018, 63, 2818-2832.	5.7	9
54	Data-Driven Synthesis of Robust Invariant Sets and Controllers. , 2022, 6, 1676-1681.		6

#	ARTICLE	IF	CITATIONS
55	An Asynchronous Algorithm for Optimal Vehicle Coordination at Traffic Intersections * *This work was supported by Copplar (project number 32226302), the Swedish Research Council (VR, grant number) Tj ETQq1,10.784314 rgBT /O IFAC-PapersOnLine, 2017, 50, 12008-12014.	0.9	5
56	A Periodic Tracking MPC that is Locally Equivalent to Periodic Economic MPC * *This research was supported by the EU via ERC-HIGHWIND (259 166), FP7-ITN-TEMPO (607 957), and H2020-ITN-AWESCO (642) Tj ETQq0 0 0 rgBT /Over zyklischer Prozesseâ€• IFAC-PapersOnLine, 2017, 50, 10711-10716.	0.9	5
57	A Fast NMPC Approach based on Bounded-Variable Nonlinear Least Squares. IFAC-PapersOnLine, 2018, 51, 337-342.	0.9	5
58	Receding-horizon robust online communication scheduling for constrained networked control systems. , 2019, , .		5
59	Bias Correction in Reinforcement Learning via the Deterministic Policy Gradient Method for MPC-Based Policies. , 2021, , .		5
60	Tuning LQR Controllers: A Sensitivity-Based Approach. , 2022, 6, 932-937.		5
61	Local properties of economic NMPC, dissipativity and dynamic programming. , 2014, , .		4
62	A Gaussâ€•Newton-Like Hessian Approximation for Economic NMPC. IEEE Transactions on Automatic Control, 2021, 66, 4206-4213.	5.7	4
63	An Experimental Test Setup for Advanced Estimation and Control of an AirborneWind Energy System. Green Energy and Technology, 2013, , 459-471.	0.6	4
64	Reinforcement Learning Based on Real-Time Iteration NMPC. IFAC-PapersOnLine, 2020, 53, 5213-5218.	0.9	4
65	Constrained Controller and Observer Design by Inverse Optimality. IEEE Transactions on Automatic Control, 2022, 67, 5432-5439.	5.7	4
66	Stability-constrained Markov Decision Processes using MPC. Automatica, 2022, 143, 110399.	5.0	4
67	Impact of Communication Frequency on Remote Control of Automated Vehicles. , 2018, , .		3
68	Optimal scheduling and control for constrained multiâ€•agent networked control systems. Optimal Control Applications and Methods, 0, , .	2.1	3
69	Computation of Least-Conservative State-Constraint Sets for Decentralized MPC With Dynamic and Constraint Coupling. , 2021, 5, 235-240.		2
70	Scheduling and Robust Invariance in Networked Control Systems. IEEE Transactions on Automatic Control, 2022, 67, 3075-3082.	5.7	2
71	Primal or Dual Terminal Constraints in Economic MPC? Comparison and Insights. Lecture Notes in Control and Information Sciences, 2021, , 45-64.	1.0	2
72	Experimental Validation of Distributed Optimal Vehicle Coordination. , 2018, , .		2

#	ARTICLE	IF	CITATIONS
73	A Semidistributed Interior Point Algorithm for Optimal Coordination of Automated Vehicles at Intersections. IEEE Transactions on Control Systems Technology, 2022, 30, 1977-1989.	5.2	2
74	Estimation of uncertain ARX models with ellipsoidal parameter variability. , 2015, , .		1
75	Input Constraint Sets for Robust Regulation of Linear Systems. IEEE Transactions on Automatic Control, 2022, 67, 5533-5540.	5.7	1
76	A compression algorithm for real-time distributed nonlinear MPC. , 2015, , .		0
77	Practical Economic MPC. Proceedings in Applied Mathematics and Mechanics, 2021, 20, e202000216.	0.2	0
78	Computation of Input Disturbance Sets for Constrained Output Reachability. IEEE Transactions on Automatic Control, 2022, , 1-8.	5.7	0