List of Publications

Alberto De Marchi

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Papers listed by type and year. List available online in BibTEX format here.bib.
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Journal articles

De Marchi, Alberto (2024). "Implicit augmented Lagrangian and generalized optimization". In: *Journal of Applied and Numerical Optimization* 6.2, pp. 291–320. DOI: 10.23952/jano.6.2024.2.08. arXiv: 2302.00363.

De Marchi, Alberto and Patrick Mehlitz (2024). "Local properties and augmented Lagrangians in fully nonconvex composite optimization". In: *Journal of Nonsmooth Analysis and Optimization* 5. DOI: 10.46298/jnsao-2024-12235. arXiv: 2309.01980.

Sciullo, Luca, Alberto De Marchi, Angelo Trotta, Federico Montori, Luciano Bononi, and Marco Di Felice (2024). "Relativistic Digital Twin: Bringing the IoT to the future". In: *Future Generation Computer Systems* 153, pp. 521–536. DOI: 10.1016/j.future.2023.12.016. arXiv: 2301.07390.

Britzelmeier, Andreas, Alberto De Marchi, and Rebecca Richter (2023). "Dynamic and nonlinear programming for trajectory planning". In: *IEEE Control Systems Letters* 7, pp. 2569–2574. ISSN: 2475-1456. DOI: 10.1109/LCSYS.2023.3285746.

De Marchi, Alberto (2023b). "Proximal gradient methods beyond monotony". In: *Journal of Nonsmooth Analysis and Optimization* 4. DOI: 10.46298/jnsao-2023-10290. arXiv: 2211.04827.

— (2023c). "Regularized interior point methods for constrained optimization and control". In: *IFAC-PapersOnLine* 56.2, pp. 1247–1252. DOI: 10.1016/j.ifacol.2023.10.1747. arXiv: 2210.15825.

De Marchi, Alberto, Axel Dreves, Matthias Gerdts, Simon Gottschalk, and Sergejs Rogovs (2023). "A function approximation approach for parametric optimization". In: *Journal of Optimization Theory and Applications* 196.1, pp. 56–77. DOI: 10.1007/s10957-022-02138-4.

De Marchi, Alberto, Xiaoxi Jia, Christian Kanzow, and Patrick Mehlitz (2023). "Constrained composite optimization and augmented Lagrangian methods". In: *Mathematical Programming* 201.1, pp. 863–896. DOI: 10.1007/s10107-022-01922-4. arXiv: 2203.05276.

De Marchi, Alberto (2022). "On a primal-dual Newton proximal method for convex quadratic programs". In: *Computational Optimization and Applications* 81.2, pp. 369–395. DOI: 10.1007/s10589-021-00342-y.

De Marchi, Alberto and Andreas Themelis (2022b). "Proximal gradient algorithms under local Lipschitz gradient continuity". In: *Journal of Optimization Theory and Applications* 194.3, pp. 771–794. DOI: 10.1007/s10957-022-02048-5. arXiv: 2112.13000.

Calà Campana, Francesca, Alberto De Marchi, Alfio Borzí, and Matthias Gerdts (2021). "On the numerical solution of a free end-time homicidal chauffeur game". In: *ESAIM: ProcS* 71, pp. 33–42. DOI: 10.1051/proc/202171104.

De Marchi, Alberto (2019). “On the mixed-integer linear-quadratic optimal control with switching cost”. In: *IEEE Control Systems Letters* 3.4, pp. 990–995. ISSN: 2475-1456. DOI: 10.1109/LCSYS.2019.2920425.

De Marchi, Alberto and Matthias Gerdts (2019b). “Free finite horizon LQR: a bilevel perspective and its application to model predictive control”. In: *Automatica* 100, pp. 299–311. ISSN: 0005-1098. DOI: 10.1016/j.automatica.2018.11.032.

— (2018). “Traffic flow on single-lane road networks: Multiscale modelling and simulation”. In: *IFAC-PapersOnLine* 51.2, pp. 162–167. DOI: 10.1016/j.ifacol.2018.03.028.

Conference proceedings

De Marchi, Alberto (2021b). “Augmented Lagrangian methods as dynamical systems for constrained optimization”. In: *2021 60th IEEE Conference on Decision and Control (CDC)*. DOI: 10.1109/CDC45484.2021.9683199.

— (2020). “Constrained and sparse switching times optimization via augmented Lagrangian proximal methods”. In: *2020 American Control Conference (ACC)*. Denver, CO, USA: IEEE, pp. 3633–3638. DOI: 10.23919/ACC45564.2020.9147892.

De Marchi, Alberto and Matthias Gerdts (2020). “Sparse switching times optimization and a sweeping Hessian proximal method”. In: *Operations Research Proceedings 2019*. Ed. by Janis S. Neufeld, Udo Buscher, Rainer Lasch, Dominik Möst, and Jörn Schönberger. Cham: Springer International Publishing, pp. 89–95. ISBN: 978-3-030-48439-2. DOI: 10.1007/978-3-030-48439-2_11.

— (2019a). “An iterative method for final time optimization in nonlinear optimal control”. In: *2019 Proceedings of the Conference on Control and its Applications*. SIAM, pp. 60–66. DOI: 10.1137/1.9781611975758.10.

— (2019c). “Nonsmooth Newton’s method: Some structure exploitation”. In: *ICCS 2019, LNCS 11538*. Ed. by J. M. F. Rodrigues et al. Springer, pp. 409–420. DOI: 10.1007/978-3-030-22744-9_32.

Britzelmeier, Andreas, Alberto De Marchi, and Matthias Gerdts (2018). “An iterative solution approach for a bi-level optimization problem for congestion avoidance on road networks”. In: *Numerical Methods for Optimal Control Problems*. Ed. by Maurizio Falcone, Roberto Ferretti, Lars Grüne, and William M. McEneaney. Springer International Publishing, pp. 23–38. DOI: 10.1007/978-3-030-01959-4_2.

Biral, Francesco, Enrico Bertolazzi, Paolo Bosetti, Alberto De Marchi, and Martin M. Hanczyc (2016). “Optimal control of a laser source to generate a minimum time trajectory of a droplet in a liquid layer”. In: *2016 Future Technologies Conference (FTC)*, pp. 1208–1216. DOI: 10.1109/FTC.2016.7821754.

Theses

De Marchi, Alberto (2021a). “Augmented Lagrangian and Proximal Methods for Constrained Structured Optimization”. PhD thesis. Munich, Germany: University of the Bundeswehr Munich. DOI: 10.5281/zenodo.4972535.

— (2016). “Modelling and optimal control of laser-driven thermocapillary motion of a droplet”. MA thesis. University of Trento. DOI: 10.5281/zenodo.1481663.

Preprints

Nikitina, Viktoriya, Alberto De Marchi, and Matthias Gerdts (2024). *Hybrid optimal control with mixed-integer Lagrangian methods*. arXiv: 2403.06842.

De Marchi, Alberto (2023a). *Mixed-integer linearity in nonlinear optimization: a trust region approach*. arXiv: 2310.17285.

Richter, Rebecca, Alberto De Marchi, and Matthias Gerdts (2023). *Collision avoidance using iterative dynamic and nonlinear programming with adaptive grid refinements*. arXiv: 2311.03148.

De Marchi, Alberto and Andreas Themelis (2022a). *An interior proximal gradient method for nonconvex optimization*. arXiv: 2208.00799.