CURICULUM VITAE

PERSONAL INFORMATION

Name: Sébastien Gros
Nationality: Swiss
Date of birth: 23.05.1977

Professional addresses:

Department of Engineering Cybernetic
Faculty of Information Technology
Norwegian University of Technology, NTNU
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Research Gate: https://www.researchgate.net/profile/Sebastien_Gros2

EDUCATION

MSc Thesis, Microtechnique, Ecole Polytechnique Fédérale de Lausanne (EPFL), 2001

PhD Thesis, "Neighboring Extremals in Optimization & Control", 2007
Dept. of Mechanical Engineering, Laboratoire d'Automatique, Ecole Polytechnique Fédérale de Lausanne (EPFL), supervision by Prof. D. Bonvin.

POSITIONS

Head of Department at Eng. Cybernetic, NTNU (Norwegian University of Technology), January 2022-present

Full Professor at Department of Eng. Cybernetic, NTNU (Norwegian University of Technology), 2019-present

Guest Professor at Department of Electrical Engineering, Chalmers University of Technology, 2019-present

Associate Professor at Department of Electrical Engineering, Chalmers University of Technology, 2016-2018

Assistant Professor at Department of Signals and Systems, Chalmers University of Technology, 2013-2016

Post-Doctoral position at OPTEC / KU Leuven, 2011 – 2013 under the supervision of Prof. M. Diehl

R&D Engineer at MLS-Control, wind energy industry, Glasgow, UK, 2010-2011

SUPERVISION

COMPLETED PHD THESIS

"Structure-exploiting optimization methods for Model Predictive Control", E. Klintberg, Chalmers, 2013-2017

"Integration of Airborne Wind Energy Systems in the Power Grid", E. Malz, Chalmers, 2015 - expected 2020

ONGOING PHD THESIS

"Classification and Optimal Management of 2nd life of EV Batteries", Huang Zhang, Volvo, 2020 -

expected 2024

"A new generation of algorithms for power-train control", Anand Ganessan, Volvo, 2018 - expected 2023

"Safe Reinforcement Learning for Model Predictive Control", A. Kordabad, 2020-present, NTNU

"Combining Reinforcement Learning and Model Predictive Control", H. Esfahani, 2020-present, NTNU

"Learning and Model Predictive Control for Energy Management", W. Cai, 2020-present, NTNU

"Learning and Model Predictive Control: Big Data and Unstructured Models", S. Sawant, 2020-present, NTNU

"Mission-wide Risk-based Model Predictive Control", K. Wang, 2020-present, NTNU

POST-DOC PROJECTS

"Learning for Model Predictive Control", A. Anand, NTNU, 2023-2025

"Safe Reinforcement Learning via Model Predictive Control", D. Reinhardt, NTNU, 2022-2024

"Intelligent transportation using Model Predictive Control", A. Dabiri, NTNU, 2019-2020

"Integration of renewable energies in the power system", J. Vasilj, Chalmers, 2016-2017

"Real-time Economic NMPC for optimal wind turbine control", M. Abdollahpouri, Chalmers, 2017-2018

"Real-time Economic NMPC for optimal wind turbine control", J. A.L. Pacho Chalmers, 2017-2019

"Service Optimization of Charging Stations using Machine Learning", S. Bae, Chalmers, 2018-2020

CO-SUPERVISION

PHD THESIS

"NMPC for Aerospace Applications", M. Zanon, KU Leuven, 2011-2015

"Identification of Nonlinear Black-Box State Space Model", G. Giordano, Chalmers, 2013-2018

"Low-order Aerodynamic Models in Multi-Kite Optimal Control Problems" R. Leuthold, Albert-Ludwigs-Universität Freiburg, 2016 - present

"Optimization-based strategies for coordination of autonomous vehicles", R. Hult, 2014-2019, Chalmers

"Operational Energy Network Management for Electric Buses", R. Lacombe, Chalmers, 2019 - present

"Robust trajectory optimization by chance constraints and generalized polynomial chaos", 2015-2020, P. Piprek, TU Munich

"Robust MPC for Artifical Pancreas with Subcutaneuous Injection", K.D. Benam, 2020 - present, NTNU

"Learning-based MPC", K. Seel, 2019 - present, NTNU

SUPERVISION TRAINING

CHALMERS SUPERVISION FORUM – 2016
CHALMERS SUPERVISION FORUM – 2015
CHALMERS SUPERVISION OF RESEARCH – 2015
CHALMERS LEADERSHIP PROGRAM – 2013-2014

PEDAGOGICAL TRAINING & EVALUATION

CHALMERS PHILOSOPHY OF LEARNING – 2017
CHALMERS PHILOSOPHY OF SCIENCE – 2016
CHALMERS PEDAGOGICAL COURSE – 2015-2016

TEACHING EVALUATION from the Language Teaching Centre at Albert-Ludwigs-Universität Freiburg on the PhD course "Numerical Optimal Control with Differential-Algebraic Equations", February 2016

TEACHING EXPERIENCE

BACHELOR COURSES

"Control Theory" for Electrical Engineers, 2016 (about 80 students), teaching grade: 4.21 / 5.0

"Control Theory" for Electrical Engineers, 2015 (about 80 students), teaching grade: 3.84 / 5.0

"Control Theory" for Electrical Engineers, 2014 (about 80 students), teaching grade: 4.03 / 5.0

"Control Theory" for Electrical Engineers, 2013 (about 80 students), teaching grade: 3.4 / 5.0

MASTER COURSES

"Modeling and Simulation" for Electrical Engineers, NTNU, 2020 (about 200 students)

"Modeling and Simulation" for Electrical Engineers, Chalmers, 2018 (about 200 students), teaching grade: 3.6 / 5.0

"Modeling and Simulation" for Electrical Engineers, Chalmers, 2017 (about 200 students, the course was entirely re-created by me), teaching grade: 3.3 / 5.0

PHD COURSES

"Numerical Optimal Control", Norwegian University of Technology (NTNU), for PhD students and faculty members, 2020, about 30 students

"Optimal Control based on Reinforcement Learning", Chalmers University of Technology, series of five lectures, 2020, about 20 students

"Numerical Optimal Control", Chalmers University of Technology, series of five lectures, 2020, about 20 students

"Recent Progress in Safe Reinforcement Learning based on robust Model Predictive Control", Technical University of München, series of five lectures, 2019, about 20 students

"Optimal Control Theory & Practice", Norwegian University of Technology (NTNU), for PhD students and faculty members, 2018, about 30 students

"Optimal Control based on Reinforcement Learning", Technical University of München, series of five lectures, 2018

"Numerical Optimal Control", Norwegian University of Technology (NTNU), for PhD students and faculty members, 2018, about 30 students

"Introduction to Reinforcement Learning", Chalmers, for PhD students, faculty members and industrial visitors, 2017, in collaboration with Prof. L. Svensson, about 80 students

"Advanced Topics in Optimal Control", Technical University of München, for PhD students and faculty members, 2017, about 20 students

"Numerical Optimal Control", Norwegian University of Technology (NTNU), for PhD students and faculty members, 2016, about 20 students

"Numerical Optimal Control with Differential-Algebraic Equations", Albert-Ludwigs-Universität Freiburg, for international PhD students and academics, 2016, about 60 students

"Direct Optimal Control" for PhD students and industrial visitors, Chalmers, about 10 students, 2015

"Direct Optimal Control" for PhD students and industrial visitors, Chalmers, about 10 students, 2014

INDUSTRIAL COURSES

"System Identification", Volvo Car / dynamic simulation group, 2019

"Introduction to Optimal Control & NMPC", Chalmers Professional Education, 2019

"System Identification", Volvo Car / dynamic simulation group, 2018

RECENT INVITED SEMINARS

"Learning for MPC: fundamentals and novel results", Xidian University, 2022

"Combining Reinforcement Learning and MPC", AdCONIP, 2022

"Reinforcement Learning and MPC: an ideal combination?", Mitsubishi Electric Research Lab, 2022

"Reinforcement Learning and MPC: an introduction", DNV, 2022

"Reinforcement Learning and MPC", Chinese MPC PhD school, 2021, 2022

"Model-Based Optimal Control and Reinforcement Learning: a Path to Safe Data-Based Policies?", KES 2021

"Reinforcement Learning and MPC: introduction and recent advances", Chalmers University of Technology, 2020, 2021

"Reinforcement Learning and MPC", PhD Summer School Freiburg, 2021

"Reinforcement Learning and MPC", TU Munich, 2019, 2020

GRANTS

Author of the Norwegian Research Council grant SARLEM, funding 2 PhD positions and 1 postdoc position, on the topic of Safe Reinforcement Learning using Model Predictive Control techniques (15MNOK)

Co-author and PI for the EU - Marie Curie Individual Fellowship CEGUM: Coordination for Efficient and Green Mobility - one Post-Doc position was given to Dr. A. Dabiri under my supervision (2MNOK)

Co-author and co-recipient of the proposal "Integration of Airborne Wind Energy in the future power system", Chalmers Area of Advance - Energy, 2018 (2.1MSEK)

Co-author and co-recipient of the proposal "Operational Energy Network Management for Electric Buses" (OPNET), granted by Swedish Energimyndigheten, 2018 (4MSEK)

Main author of the proposal "Service Optimization of Charging Stations using Machine Learning" in collaboration with Volvo truck, granted by the Swedish Electromobility Center (SEC), 2018 (1MSEK)

Main author of the proposal "Classification and Optimal Management of 2nd life EV batteries", 2018, in collaboration with Volvo truck, granted by Energimyndigheten (4MSEK)

Main author of the proposal "A new generation of algorithms for modern powertrains", in collaboration with Volvo Car, granted by Swedish FFI, 2018 (4.2MSEK).

Main author of the DAWESO project on the integration of Airborne Wind Energy into the European power grid, 2017 (0.3MSEK)

Co-author and co-recipient of an FFI grant, funding a PhD position (co-supervision Prof. Torsten Vik) on the adaptive modeling of high-performance batteries for electric mobility, 2017, Swedish Batteriefonden (4.3MSEK).

Co-author and co-recipient of the project Eco4Wind on the control of wind turbine based on NMPC, in collaboration with several universities and companies. Two post-doc positions have been allotted to Chalmers under my supervision, 2017 (6MSEK)

Co-author and co-recipient of the AWESCO EU-ITN project 2016-2019, on the topic of optimization of Airborne Wind Energy systems. One PhD position was allotted to Chalmers under my supervision (3MSEK)

EVALUATOR

PHD DEFENSES

"Safe Reinforcement Learning Control for Water Distribution Networks", Jorge Val Ledesma, 2022 (opponent)

"Numerical Optimal Control with Applications in Aerospace", Y. Nie, Imperial College, 2020 (opponent)

"Robust Trajectory Optimization Applying Chance Constraints and Generalized Polynomial Chaos". P. Piprek, TU Munich 2020 (opponent)

"Control and Management of Energy Storage Systems in Microgrids", U. E. Nair, 2020, University Polytechnique of Catalunya (opponent)

"Motion Planning and Feedback Control Techniques with Applications to Long Tractor-Trailer Vehicles", O. Ljungqvist, 2020, University of Linköping (opponent)

"Fast and Distributed Model Predictive Control", Ruben Van Parys, KU Leuven 2018 (committee)

"Model Predictive Control in Flight Control Design: Stability and Reference Tracking", Daniel, Linköping, 2017 (committee)

"Model predictive load-frequency control", Anne Mai Ersdal, Norwegian University of Science and Technology (NTNU), 2017 (opponent)

"Contrôle optimal géométrique et méthodes numériques : application au problème de montée d'un avion", Damien Goubinat, INP Toulouse, France, 2017 (rapporteur)

"Multi-Robot Motion Planning Optimisation for Handling Sheet Metal Parts", Emile Glorieux, University West Trollhättan, Sweden, 2017 (committee)

"Structure-Exploiting Numerical Algorithms for Optimal Control", Isak Nielsen, Linköping University, Sweden, 2017 (committee)

"Model Predictive Control in Flight Control Design: Stability and Reference Tracking", Daniel Simon, Licenciate, Linköping, 2014 (opponent)

"Low-Rank Distributed Control with Application to Wind Energy", Daria Madidjan, Lund, 2014 (committee)

ACADEMIC EVALUATIONS FOR PROMOTIONS AND HABILITATIONS

Evaluation of Dr. S. Lucia, TU Berlin, 2020

Evaluation of Dr. Ionela Prodan, Université de Grenoble, 2020

EDITORIAL SERVICES

Subject Editor for the journal Optimal Control Application and Methods, 2016-2017

Member of the Program Committee for the Conference on Decision and Control 2019

LANGUAGES

- English: professional
- Swedish: conversational level
- Norwegian: conversational level
- German: light conversational
- French: native

EXTRA-PROFESSIONAL ACHIEVEMENT

Project Un-peu-plus-loin (2008-2009): cycled from Switzerland to the Everest base camp (22'000km) alone and in full autonomy through some of the highest and most inhospitable regions of the world, in support of the "Foundation Nicole Niquille" (FNN) running a hospital in Nepal for the locals of the Solukhumbu District.

PERSONAL INTERESTS

- Gliding: 100-200h per year in Norway, Sweden, France, Germany, Switzerland, Italy, Czech Republic
- Cross-country skiing, ski touring, cycling, mountain biking, hiking

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REFERENCES

PROF. MORITZ DIEHL
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PROF. BO EGARDT
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LIST OF PUBLICATIONS

Journals (not exhaustive)

1. **Q-learning of the storage function in Economic Nonlinear Model Predictive Control**, A. Kordabad, S. Gros, Eng. Applications of Artificial Intelligence, 2022
2. **Distributed Eco-Driving Control of a Platoon of Electric Vehicles Through Riccati Recursion**, R. Lacombe, S. Gros, N. Murgovski, B. Kulcsár, IEEE Trans. on Intelligent Transportation Systems, 2022
3. **Convex Neural Network-Based Cost Modifications for Learning Model Predictive Control**, K. Seel, A. Kordabad, S. Gros, J.T. Gravdahl, IEEE CSS, 2022
4. **Interpretable Battery Cycle Life Range Prediction Using Early Cell Degradation Data,** H. Zhang, F. Altaf, T. Wik, S. Gros, IEEE Transactions on Transportation Electrification, 2022
5. **Learning for MPC with Stability & Safety Guarantees**, S. Gros, M. Zanon, Automatica 2022
6. **Distributed Eco-Driving Control of a Platoon of Electric Vehicles Through Riccati Recursion**, R. Lacombe, S. Gros, N. Murgovski, B. Kulcsár, IEEE Transactions on Intelligent Transportation Systems, 2022
7. **Convex Neural Network-Based Cost Modifications for Learning Model Predictive Control,** K Seel, A. Kordabad, S. Gros, J.T. Gravdahl, IEEE Open Journal of Control Systems 2022
8. **A new dissipativity condition for asymptotic stability of discounted economic MPC**, M. Zanon , S. Gros, Automatica 2022
9. **Economic MPC of Markov Decision Processes: Dissipativity in Undiscounted Infinite-Horizon Optimal Control,** S. Gros, M. Zanon, Automatica 2022
10. **Stability-Constrained Markov Decision Processes Using MPC**, S. Gros, M. Zanon, M. Palladino , Automatica 2022
11. **Identifiable prediction animal model for the bi-hormonal intraperitoneal artificial pancreas**, K. Benam, H. Koshamadi, M.K. Åm, S. Gros, A. Fougner, Journal of Process Control 2022
12. **Numerical Strategies for Mixed-Integer Optimization of Power-Split and Gear Selection in Hybrid Electric Vehicles,** A. Ganesan, S. Gros, N. Murgovski, IEEE Transactions on Intelligent Transportation Systems, 2022
13. **Safe Reinforcement Learning Using Wasserstein Distributionally Robust MPC and Chance Constraint,** A. Kordabad, R. Wisniewski, S. Gros, IEEE Access 2022
14. **Personalized Dynamic Pricing Policy for Electric Vehicles: Reinforcement learning approach**, S. Bae, S. Gros, B. Kulcsár, Transportation Research, IEEE Access 2021
15. **The value of airborne wind energy to the electricity system**, E. C. Malz, V. Walter, L. Göransson, S. Gros, Wind Energy 2021
16. **Bilevel Optimization for Bunching Mitigation and Eco-Driving of Electric Bus Lines,** R. Lacombe, S. Gros, N. Murgovski, B. Kulcsár IEEE transactions on intelligent transportation systems, 2021
17. **A Semi-Distributed Interior Point Algorithm for Optimal Coordination of Automated Vehicles at Intersections**, R. Hult, M. Zanon, S. Gros, P. Falcone, IEEE Transactions on Control System Technologies, 2021
18. **Can AI Abuse Personal Information in an EV Fast-Charging Market**? B. Sangjun, S. Gros, B. Kulcsár, Transaction on Intelligent Transportation Systems, 2021
19. **Optimal model-based trajectory planning with static polygonal constraints**, A. B. Martinsen, A. Lekkas, S. Gros, IEEE Transactions on Control Systems Technology, 2021

20. **Optimization-based Automatic Docking and Berthing of ASVs Using Exteroceptive Sensors: Theory and Experiments,** A.B. Martinsen, A. Lekkas, S. Gros, G. Bitard, IEEE Access, 2020

21. **Precision Deep-Stall Landing of Fixed-Wing UAVs using Nonlinear Model Predictive Control**, S. Mathisen, K. Gryte, S. Gros, T.A. Johansen, Journal of Intelligent and Robotic Systems, 2020

22. **Safe Reinforcement Learning Using Robust MPC,** S. Gros, M. Zanon, Transaction on Automatic Control, 2020

23. **Reinforcement learning-based tracking control of USVs in varying operational conditions**, A.B. Martinsen, A. Lekkas, S. Gros, J.A. Glomsrd, T.A, Pedersen, Frontiers in Robotic and AI, Robotic Control Systems, 2020

24. **Experimental Validation of a Semi-Distributed SQP Method for Optimal Coordination of Automated vehicles at Intersections**, R. Hult, M. Zanon, S. Gros, P. Falcone, Optimal Control, Applications and Methods, 2020

25. **A Game Approach for Charging Station Placement Based on User Preferences and Crowdedness**, S. Bae, S. Gros, B. Kulcsár, IEEE Transaction on Intelligent Transportation Systems, 2020

26. **Drag-mode airborne wind energy vs. wind turbines: An analysis of power production, variability and geography,** E. C. Malz, F. Hedenus, L. Göransson, V. Verendel, S. Gros, Energy 2019

27. **Enhancing the net energy of wind turbine using wind prediction and economic NMPC with high accuracy nonlinear WT models**, A. R. Araghi, G.H. Riahy, O. Carlson, S. Gros, Renewable Energy 2019

28. **Ideal benefits of exceeding fixed voltage limits on lithium-ion batteries with increasing cycle age**, L. Wikander, B. Fridholm, S. Gros, T. Wik, Journal of Power Sources, 2019

29. **MPC approaches for modulating air-to-water heat pumps in radiant-floor buildings,** S. Rastegapour, S. Gros, L. Ferrarini, Control Engineering Practice, 2019

30. **Wind Turbine Fatigue Reduction based on Economic-Tracking NMPC with Direct ANN Fatigue Estimation**, J. Luna, O. Falkenberg, A. Schild, S. Gros, Renewable Energy 2019

31. **Data-driven Economic NMPC using Reinforcement Learning**, S. Gros, M. Zanon, Transaction on Automatic Control, 2019

32. **Rare-Event Chance-constrained Optimal Control Using Polynomial Chaos and Subset Simulation,** P. Piprek, S. Gros, F. Holzapfel, MDPI Process, Computational Methods, 2019

33. **Dual-mode Batch-to-batch Optimization as a Markov Decision Process**, S. Gros, Ind. & Eng. Chemistry Research, 2019

34. **A reference model for airborne wind energy systems for optimization and control**, E. C. Malz, J. Koenemann, S. Sieberling, S. Gros, Renewable Energy, 2019

35. **A dual Newton strategy for tree-sparse quadratic programs and its implementation in the open-source software treeQP,** D. Kouzoupis, E. Klintberg, G. Frison, S. Gros, M. Diehl, International Journal of Robust and Nonlinear Control, 2019

36. **Voltage and power prediction of lithium-ion batteries using an extended model and dynamic optimization**, B. Fridholm, T. Wik, S. Gros, C. Zou, and A. Klintberg, Journal of Power Sources, vol. 2018

37. **Super-short Term Wind Speed Prediction based on Artificial Neural Networks for Wind Turbine Control Applications,** J. Luna, S. Gros, J. Geisler, O. Falkenberg, A. Schild, IECON 2018.

38. **Optimal Coordination of Automated Vehicles at Intersections: Theory and Experiments**, R. Hult, M. Zanon, S. Gros, P. Falcone, IEEE Transactions on Control Systems Technology 2019

39. **An improved method for Wiener-Hammerstein system identification based on the Fractional Approach**, G. Giordano, S. Gros, J. Sjöberg, Automatica 2018

40. **Day-ahead scheduling and real-time Economic MPC of CHP unit in Micro-grid with Smart buildings,** J. Vasilj, S. Gros, M. Zanon, D. Jakus, Transactions on Smart Grid, 2018

41. **A dual Newton strategy for scenario decomposition in robust multi-stage MPC**, D. Kouzoupis, E. Klintberg, S. Gros and M. Diehl, International Journal of Robust and Nonlinear Control, 2018

42. **Numerical Optimal Control with Periodicity Constraints in the Presence of Invariants**, S. Gros, M. Zanon, Transaction on Automatic Control, 2018.

43. **Inexact Newton-Type Optimization with Iterated Sensitivities**, R. Quirynen, S. Gros, M. Diehl, SIOPT, 2017.

44. **Lifted Collocation Integrators for Direct Optimal Control in ACADO Toolkit**, R. Quirynen, S. Gros, B. Houska, M. Diehl, Mathematical Programming & Computation, 2017.

45. **A parallelizable interior point method for two-stage robust MPC**, E. Klintberg, S. Gros, Transaction on Control System Technology, 2017

46. **Real-Time Economic Nonlinear Model Predictive Control for Wind Turbine Control**, S. Gros, A. Schild, International Journal of Control 2017

47. **Penalty Functions for Handling Large Deviation of Quadrature States in NMPC**, S. Gros, M. Zanon, Transaction on Automatic Control, 2017

48. **An analysis of the Directional-Modifier Adaptation algorithm based on Optimal Experimental Design**, Processes, S. Gros, 2016

49. **A Tracking NMPC Formulation that is Locally Equivalent to Economic NMPC**, M. Zanon, S. Gros, M. Diehl, Journal of Process Control, 2016

50. **Numerical structure of the Hessian of the Lagrange dual function for a class of convex problems**, E. Klintberg, S. Gros, SIAM Journal on Control and Optimization (SICON), 2016

51. **From Linear MPC to Nonlinear MPC: bridging the gap via the Real-Time Iteration**, S. Gros, M. Zanon, R. Quirynen, A. Bemborad, M. Diehl, International Journal of Control 2016

52. **An Inexact Interior Point Method for the Optimization of Differential Algebraic Systems**, E. Klintberg, S. Gros, Journal of Computer & Chemical Engineering, 2016.

53. **Real-time Nonlinear MPC and MHE for a Large-scale Mechatronic Application,** M. Vukov, S. Gros, G. Horn, G. Frison, K. Geebelen, J. B. Jørgensen, J. Swevers, M. Diehl, Control Engineering Practice, 2015.

54. **Indefinite Linear MPC and Approximated Economic MPC for Nonlinear Systems**, M. Zanon, S. Gros and M. Diehl. Journal of Process Control, 2014.

55. **Optimization-based load reduction during rapid shutdown of multi-megawatt wind turbine generators,** S. Gros and B. Chachuat, Wind Energy, Vol. 17, Issue 7, pp 1055-1075, 2013

56. **Airborne Wind Energy Based on Dual Airfoils,** Wind Energy - Special Issue 2013, M. Zanon, S. Gros, J. Andersson and M. Diehl.

57. **Neighboring Extremal Control for Singular Dynamics Optimization Problems I: Single Input Case**, S. Gros, B. Srinivasan, and D. Bonvin, International Journal of Control, 82:1099-1112, 2009.

58. **Neighboring Extremal Control for Singular Dynamics Optimization Problems II: Multiple-input Case** , S. Gros, B. Chachuat, and D. Bonvin, International Journal of Control, 82:1193-1211, 2009.

59. **Optimizing Control based on Output Feedback**, S. Gros, B. Srinivasan, and D. Bonvin. Computer & Chemical Engineering, 2009, page 191-198.

60. **Robust Predictive Control Based on Neighboring Extremals**, Journal of Process Control, vol. 16, num. 3, p. 243-253, 2006, S. Gros, B. Srinivasan, and D. Bonvin.

Book Chapters

1. **Online Non-convex Optimal Control,** S. Gros, in Handbook of Model Predictive Control, Birkhauser, 2018

2. **Modeling of Airborne Wind Energy Systems in Natural Coordinates**, S. Gros and M. Diehl, Green Energy and Technology, Edition Springer-Verlag 2013

3. **Numerical Trajectory Optimization for Airborne Wind Energy Systems Describred by High-Fidelity Aircraft Models,** G. Horn, S. Gros, and M. Diehl, Green Energy and Technology, 2013

4. **Model predictive control of rigid-airfoil Airborne Wind Energy systems**, S. Gros, and M. Diehl, Green Energy and Technology, M. Zanon, 2013

5. **An experimental test setup for advanced estimation and control of an airborne wind energy system,** Geebelen, K. ,Vukov, M. ,Wagner, A., Ahmad, H., Zanon, M. ,Gros, S., Vandepitte, D., Swevers, J., Diehl, M., Green Energy and Technology, 2013

6. **A Two-time-scale Control Scheme for Fast Unconstrained Systems,** S. Gros, D. Buccieri, P. Mullhaupt and D. Bonvin, Springer Lecture Notes in Control and Information Sciences Series, 2006

International conferences (not exhaustive)

1. **Quasi-Newton Iteration in Deterministic Policy Gradient**, A. Kordabad, H. Esfahini, W. Cai, S. Gros, ACC 2022

2. **Bridging the gap between QP-based and MPC-based RL**, S. Sawant, S. Gros, IFAC International Conference on Intelligent Control and Automation 2022

3. **Policy Gradient Reinforcement Learning for Uncertain Polytopic LPV Systems based on MHE-MPC, H. Esfahani**, S. Gros, IFAC International Conference on Intelligent Control and Automation, 2022

4. **A Nonlinear State Observer for the Bi-Hormonal Intraperitoneal Artificial Pancreas**, K. D. Benam, H. Khoshamadi, L. Lema-Pérez, S. Gros, A. Fougner, EMBC 2022

5. **Optimization of the Model Predictive Control Update Interval Using Reinforcement Learning**, E. Bøhn, S. Gros, S. Moe, T.A. Johansen, Learning for Dynamics & Control Conference, 2021

6. **Approximate Robust NMPC using Reinforcement Learning**, H. Esfahani, S. Gros, ECC 2021

7. **Adaptive Model Predictive Control for demand response in building,** J.P. Maree, S. Gros, H. Walnum, ECC 2021

8. **Reinforcement Learning using MPC for Economic MDPs**, A. Kordabad, W. Cai, S. Gros, ECC 2021

9. **Bias Correction in Reinforcement Learning via the Deterministic Policy Gradient Method for MPC-Based Policies**, S. Gros, M. Zanon, ECC 2021

10. **Reinforcement Learning based on MPC and the Stochastic Policy Gradient Method**, S. Gros, M. Zanon, ACC 2021

11. **Bias Correction in Deterministic Policy Gradient Using Robust MPC**, A. Kordabad, S. Gros ACC 2021

12. **Approximate Robust NMPC using Reinforcement Learning**, H. Esfahani, S. Gros, ECC 2021

13. **Reinforcement Learning based on MPC/MHE for Unmodeled and Partially Observable Dynamics**, H. Esfahani, A. Kordabad, S. Gros ACC 2021

14. **Reinforcement Learning based on Scenario-tree MPC for ASVs**, A. Kordabad, H. Esfahani, A. Lekkas, S. Gros, ACC 2021

15. **Effect of Engine Dynamics on Optimal Power-Split Control Strategies in Hybrid Electric Vehicles,** A. Ganesan, S. Gros, N. Murgovski, C. F. Lee, M. Sivertsson, VPPC'2020

16. **Hierarchical Control of Electric Bus Lines,** R. Lacombe, S. Gros, N. Murgovski, B. Kulcsar, IFAC 2020

17. **Reinforcement Learning Based on the Real-Time Iteration and NMPC,** M. Zanon, V. Kungurtsev, S. Gros, IFAC 2020

18. **Reinforcement Learning for mixed-integer problems based on MPC**, S. Gros, M. Zanon, IFAC 2020

19. **Safe Reinforcement Learning via projection on a safe set: how to achieve optimality?** S. Gros, M. Zanon, A. Bemporad, IFAC 2020

20. **Combining system identification with reinforcement learning-based MPC**, A. B. Martinsen, A. M. Lekkas, S. Gros, IFAC 2020

21. **Economic NMPC for Multiple Buildings Connected to a Heat Pump and Thermal and Electrical Storages**, S. Rastegarpour, L. Ferrarini, S. Gros, IFAC 2020

22. **Model Predictive Control for Autonomous Ship Emergency Risk Management**, S. AA. J. Blindheim, S. Gros, T. A. Johansen, IFAC 2020

23. **Autonomous docking using direct optimal control,** A.B. Martinsen, A. Lekkas, S. Gros, 12th IFAC Conference on Control Applications in Marine Systems, Robotics, and Vehicles, 2019

24. **Practical Reinforcement Learning of Stabilizing Economic MPC,** M. Zanon, S. Gros, A. Bemporad, European Control Conference 2019

25. **A Distributed Robust Optimal Control Framework Based on Polynomial Chaos,** P Piprek, S Gros, F Holzapfel, CEAS Specialist Conference on Guidance, Navigation & Control (EuroGNC 2019)

26. **Engineering Wake Induction Model For Axisymmetric Multi-Kite Systems**, R Leuthold, C Crawford, S Gros, M Diehl, Journal of Physics: Conference Series 1256 (1), 012009, 2019

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