

Florian Dörfler

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Academic Curriculum Vitae

Research Interests

My interests are centered around automatic control, system theory, and optimization. My particular foci are on network systems, data-driven settings, and applications to power systems. My group has pioneered many theory methods that also found their way into industrial applications in the energy domain, such as online feedback optimization, data-enabled predictive control, or synchronization in oscillator networks.

Academic Positions

- Aug'19–current Associate Professor, *ETH Zürich*, Switzerland
Department of Information Technology and Electrical Engineering
- July'14–July'19 Assistant Professor, *ETH Zürich*, Switzerland
Department of Information Technology and Electrical Engineering
- Sep'13–July'14 Assistant Professor, *University of California at Los Angeles (UCLA)*, United States
Electrical & Computer Engineering Department

Academic Degrees

- Sep'09–Sep'13 Ph.D. in Mechanical Engineering, *University of California at Santa Barbara*
Advisor: Francesco Bullo
- Oct'03–Dec'08 Diploma in Engineering Cybernetics, *University of Stuttgart*
Advisors: Frank Allgöwer (University of Stuttgart) and Bruce Francis (University of Toronto)

Notable Academic Leadership

- Jan'21–Jan'22 Deputy Head of the *Department of Information Technology and Electrical Engineering, ETH Zürich*
- 2021–current Council Member of the *European Control Association*
- 2022–current *ETH Zürich* Didactic Fellow

Visiting Research Positions

- Mar'20–Jul'20 Visiting Professor, *KTH Stockholm* at the *Division of Decision and Control Systems*
- Mar'13–July'14 Visiting Professor, *California Institute of Technology* at the *Rigorous Systems Research Group*
- Summers '11,'12 Graduate Student Researcher at *Los Alamos National Laboratories* at the *Center for Nonlinear Studies*
- Aug'07–Aug'08 Graduate Student Researcher at *University of Toronto* at the *Systems Control Group*

Awards & Recognitions

Career Awards

- 2020 EUCA European Control Award
(distinguished European researcher under the age of 40 in systems and control)
- 2020 IFAC Manfred Thoma Medal
(distinguished researcher and/or engineer under the age of 40 in systems and control)

Best Paper Awards received by myself or by my students

- 2022 IEEE Transactions on Power Electronics Prize Paper Award
- 2022 IEEE CSS Swiss Chapter Young Author Best Journal Paper Award
- 2021 Best Paper Award at IEEE International Conference on Intelligent Transportation Systems
- 2020 Best Student & Outstanding Student Paper Award at IEEE Conference on Decision and Control
- 2020 Best Paper Award at IEEE PES General Meeting
- 2019 Best Student Paper Award at European Control Conference
- 2017 Basil Papadias Best Student Paper Award at IEEE PES PowerTech Conference
- 2016 IEEE Circuits and Systems Guillemin-Cauer Best Paper Award
- 2016 Top Five Finalist for Best Student Paper Award at American Control Conference
- 2014 IFAC Automatica Paper Prize
- 2013 Top Five Finalist for Best Student Paper Award at European Control Conference
- 2011 O. Hugo Schuck Best Paper Award awarded by American Automatic Control Council
- 2010 Best Student Paper Award at American Control Conference

Thesis Recognitions received by myself or by my students

- 2017–current 7 × Silver Medal of ETH Zürich for Adrian Hauswirth, Ezzat Elokda, Verena Häberle, Nicolas Lanzetti, Panagiotis Grontas, Sebastian Curi, and Yannick Meier
- 2017, '20 2 × Willi-Studer Preis for Nicolas Lanzetti and Yannick Meier
- 2020 Schweizer Gesellschaft für Automatik (SGA) best master thesis award for Verena Häberle
- 2019 ABB Research Award for Liviu Aolaritei
- 2015 UC Santa Barbara Mechanical Engineering Department Best PhD Award
- 2008 Diplom awarded with special distinction by the University of Stuttgart

Research Awards

Total amount of competitive personal third-party funding acquired thus far: 6,719,443.43 CHF

- 2022 European Commission HORIZON-CL5-2022-D3-01-11: *Advanced Grid Interface for Innovative Storage Integration (AGISTIN)*
- 2022 NCCR Automation Industry Call: *Data-driven power system equivalent for modern power systems applications*
- 2022 ETH Zürich and Huawei Technologies Co., Ltd. Contract #20176: *Inertia-Stiffness Control Technology for Smart Grid Forming Photovoltaic Power Plants*
- 2022 SNF/FW Weave Project 200021E_20397: *From model-based to data-driven design: Signal processing and control of noisy nonlinear systems*

- 2020 SNF NCCR Automation (51NF40_180545)
- 2020 European Commission H2020 #883985: *Powering System flexibility in the future through RES (POSYTYF)*
- 2019 KAUST Office of Sponsored Research, OSR-2019-CoE-NEOM-4178.11: *GRIDX: The Autonomous Digital Grid*
- 2019 SNF Assistant Professor Energy Grant #PYAPP2_160573/2: mobility funds
- 2019 SNF Scientific Exchanges IZSEZo_185442: *International Workshop on Future Electric Power Systems*
- 2019 Swiss Federal Office of Energy (SFOE) Research Program Pilot-, Demonstrations- und Leuchtturmprojekte: *Renewable Management and Real-Time Control Platform (ReMaP) (SI/501810-01)*
- 2018 SNF Scientific Exchanges IZSEZo_183110: *Workshop on Vistas in Control*
- 2018 Swiss Federal Office of Energy (SFOE) Research Program Grids SI/501708: *a Unified control framework for real-time power system operation (UNICORN)* (note: led by Saverio Bolognani)
- 2018 Swiss Federal Office of Energy (SFOE) Research Program Grids SI/501707: *Grid-forming control of renewable generation and power electronics (GREAT)* (note: led by Dominic Groß)
- 2018 SATW Scientific Conference Funding F-2018-010: *Workshop on Vistas in Control*
- 2017 ETH Zürich and ABB Schweiz AG Contract #12376: *Decentralized Control of Power Converters*
- 2016 European Commission H2020 #691800: *Massive integration of power electronic devices (MIGRATE)*
- 2016 SNF Scientific Conference Funding 20CO21_171241/1: *International Workshop on Future Electric Power Systems*
- 2015 ETH Seed Project SP-ESC 2015-07(4): *Novel control approaches for low-inertia power grids*
- 2015 SNF Assistant Professor Energy Grant #PYAPP2_160573: *Plug-and-Play Control & Optimization in Microgrids*
- 2014 NSF EPCN Medium #1406891: *Virtual Oscillator Control for Microgrids* (declined when leaving UCLA)

Teaching Activities

Lecturing

ETH Zürich, Switzerland

- 2015–current *Control Systems*
- 2015–2019 *ETH Control Seminar Series*
- 2019 *Signals and Systems II*
- 2015–2018 & 2021–current *Distributed Systems and Control*

Ashesi University, Ghana

- 2023 *Control Systems*

University of California at Los Angeles, United States

- 2014 *Linear Systems: State-Space Approach*
- 2014 *Distributed Systems and Control*

Graduate Schools

- 2023 DTU PES Summer School on *Future Energy Systems: Advances in OR and AI*, Technical University of Denmark (DTU), Copenhagen, Denmark
- 2022 EECI Graduate School on *Control and Optimization of Autonomous Power Systems*, Royal Institute of Technology (KTH), Stockholm, Sweden
- 2021 *Optimization and Control of Infrastructure Networks* Summer School (virtual)
- 2020 EECI Graduate School on *Control and Optimization of Autonomous Power Systems*, Royal Institute of Technology (KTH), Stockholm, Sweden

2019	Autumn School <i>Hybrid and multimodal energy systems</i> , Karlsruher Institut für Technologie (KIT), Karlsruhe, Germany
2017	<i>Innovative controls for renewable source integration into smart energy systems</i> (INCITE) European Summer School, Universitat Politècnica de Catalunya (UPC), Barcelona, Spain
2016	DISC Winter Course on <i>Power Systems Control - from Circuits to Economics</i> , University of Groningen, Groningen, Netherlands
2015	<i>Grid Science Winter School & Conference</i> , Santa Fe, United States
2015	MSE Winter School <i>Holistic Modeling and Control of Energy Systems</i> , Ohlstadt, Germany

Mentoring

Doctoral Students

Oct'22-current	Andras Sasfi	(co-advised with Ivan Markovsky)
Jul'22-current	Zhiyu He	(co-advised with Michael Mühlebach)
Apr'22-current	Eder Baron	(externally supervised from Austrian Institute of Technology)
May'21-current	Sophie Hall	(co-advised with Giuseppe Belgioioso and Dominic Liao-McPherson)
Nov'20-current	Lenart Treven	(co-advised with Andreas Krause)
Nov'20-current	Andrea Martin	(co-advised with Giancarlo Ferrari Trecate and John Lygeros)
Nov'20-current	Jean-Sébastien Brouillon	(co-advised with Giancarlo Ferrari Trecate)
Oct'20-current	Ezzat Elokda	(co-advised with Saverio Bolognani, Andrea Censi, and Emilio Frazzoli)
Oct'20-current	Alessandro Zanardi	(co-advised with Saverio Bolognani, Andrea Censi, and Emilio Frazzoli)
Oct'20-current	Michael Schneeberger	(co-advised with Silvia Mastellone)
Jun'20-current	Verena Häberle	(co-advised with Eduardo Prieto)
Oct'19-current	Nicolas Lanzetti	(co-advised with Saverio Bolognani)
Jan'19-current	Irina Subotic	(co-advised with Dominic Groß)
Mar'18-current	Liviu Aolaritei	(co-advised with Saverio Bolognani)
Aug'17-current	Ali Tayyebi-Khameneh	(externally supervised from Austrian Institute of Technology)

Postdoctoral Researchers

Sep'23-current	Carmen Amo Alonso	(co-advised with Melanie Zeilinger and Ryan Cotterell)
Aug'23-current	Jaap Eising	
Jun'23-current	Sarah Li	(co-advised with John Lygeros)
Mar'23-current	Mattia Bianchi	
Nov'22-current	Giulia De Pasquale	
Oct'22-current	Keith Moffat	
Nov'21-current	Xiuqiang He	
Sep'20-current	Linbin Huang	

Senior Scientists

Jan'16-current	Saverio Bolognani	
Sep'20-current	Giuseppe Belgioioso	
Oct'20-current	Alberto Padoan	(co-advised with John Lygeros)

Alumni

Oct'18–Jul'23	Lukas Ortmann	(now Professor at Eastern Switzerland University of Applied Sciences)
Oct'22–Dec'22	Ivan Markovsky	(now Research Professor at ICREA, Barcelona, Spain)
Sep'17–Nov'22	Jeremy Coulson	(now Assistant Professor at University of Wisconsin Madison)
Feb'19–Jul'22	Miguel Picallo Cruz	(now senior consultant at Palantir Technologies)
Feb'20–Feb'22	Michael Fisher	(now Assistant Professor at University of Waterloo)
Oct'21–Dec'21	Henk van Waarde	(now Assistant Professor at University of Groningen)
Oct'20–Aug'21	Soroosh Shafieezadeh Abadeh	(now Assistant Professor at Cornell University)
Jun'18–Jun'21	Wenjun Mei	(now Assistant Professor at Peking University)
Jan'16–Apr'21	Nicolò Pagan	(now postdoc at Universität Zürich & ETH Zürich)
Apr'15–Jan'19	Adrian Hauswirth	(now senior data & optimization scientist at BKW Energie)
Aug'18–Jul'20	Robin Delabays	(now Assistant Professor at HES-SO Valais-Wallis)
Jan'15–Dec'19	Catalin Arghir	(now Engineer at Beyond Gravity)
Jan'16–Dec'19	Dominic Groß	(now Assistant Professor at University of Wisconsin Madison)
Aug'16–Jan'18	Marcello Colombino	(now Assistant Professor at McGill University, Montreal)
Apr'16–Dec'16	Theodor Borsche	(now at Boston Consulting Group, Oslo)
July'14–July'19	Bala Kameshwar Poola	(now Research Engineer at National Renewable Energy Laboratory)
Jan'15–Jan'16	Saverio Bolognani	(now Senior Scientist at ETH Zürich)

Long-Term Visiting Scientists in my Team

2023	Emiland Garrabe, Cheng Feng, Feiran Zhao, Jianli Gao, Alessandro Chiuso, Ivan Markovsky, Yifei Guo, Liam Hamed Taghavian
2022	Eduardo Prieto, Julian Berberich, Ivan Markovsky
2021	Meng Chen, Eduardo Prieto, Keith Moffat, Ivan Markovsky, Zhiyu He
2020	Matteo Tachi, Paolo Gherardo Carlet, Andrea Favato, Ivan Markovsky
2019	Linbin Huang, Paolo Gherardo Carlet, Andrea Favato
2018	Linbin Huang, Miguel Picallo Cruz
2017	Enric Sánchez Sánchez, Robin Delabays
2016	Xiaofan Wu, Wei Chen
2015	Spyros Chatzivasileiadis, Nima Monshizadeh, John W. Simpson-Porco, Marco Todescato, Diego Romeres

Master & Bachelor Students

Nov'13–current	supervision of approximately 100 graduate (master & semester) theses
Nov'13–current	supervision of approximately 40 bachelor theses
Nov'13–current	tutoring of approximately 100 graduate students in the D-ITET, RSC, DS, & ESC master programs

Professional Service

(Co-)Organization of Major Scientific Events

2025	Publicity Chair at <i>Conference on Control Technology and Applications</i> , San Diego, United States
2024	Chair at <i>Champéry Power Conference</i> , Champéry, Switzerland
2024	Workshop Chair at <i>European Control Conference</i> , Stockholm, Sweden
2023	Co-Chair at NCCR Symposium on <i>Complex Interconnected Systems and decision making in measure spaces</i>
2022	Chair at IFAC Workshop on <i>Distributed Estimation and Control in Networked Systems</i> , Zürich, Switzerland

- 2022 Chair NCCR Symposium on *Systems Theory of Algorithms*, Zürich, Switzerland
- 2020 Chair at Workshop on Emerging Topics in Control of Power Systems, Stockholm, Sweden
- 2019 Chair at Conference on *Future Electric Power Systems and the Energy Transition*, Champéry, Switzerland
- 2019 Publicity Chair at *ACM e-Energy Conference*, Phoenix, United States, June, 2019
- 2018 Co-Chair at *Vistas in Control: ETH Control Workshop*, ETH Zürich, Switzerland
- 2016, '18, '19 Host of *ECCI International Graduate School on Control*, ETH Zürich, Switzerland
- 2017 Chair at Conference on *Future Electric Power Systems and the Energy Transition*, Champéry, Switzerland
- 2015 Co-Chair of *MSE Winter School Holistic Modelling and Control of Energy Systems*, Ohlstadt, Germany

Organization of Conference Satellite Events, Workshops, & Tutorials

- 2021 *Control for Autonomous Cities*, CDC, Austin, US
- 2020 *Emerging challenges in stability, control, & optimization of power systems* at ECC, St. Petersburg, Russia
- 2019 *Distributed control and optimization for autonomous power grids* at ECC, Naples, Italy
- 2019 *Thinking Outside the "Black Box" - Analytical Foundations of Power System Research* at PESGM, Atlanta, US
- 2016 *Optimization and Control for Tomorrow's Power Systems* at ECC, Aalborg, Denmark
- 2012 *Synchronization in Coupled Oscillators: Theory and Applications* at CDC, Maui, US

Editorial Service for Journals

- 2022–2023 Guest Editor for *IEEE Control Systems Magazine* for double special issue on *Data-Driven Control*
- 2022–2023 Guest Editor for *IEEE Transactions on Power Delivery* for special section on *Advances in Research and Applications of Power Electronics in T&D Systems*
- 2021–current Editorial Advisory Board of *International Journal of Control*
- 2020–current Editorial Board of *Annual Reviews in Control*
- 2018–2022 Associate Editor for *Automatica*
- 2016 Guest Editor for *IEEE Transactions on Smart Grid* special issue *Distributed Control and Efficient Optimization Methods for Smart Grid*

Selected Technical Program Committees for Conferences

Annual Learning for Dynamics and Control Conference (L4DC) ◦ IEEE Conference on Decision and Control (CDC) ◦ IFAC World Congress ◦ IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys) ◦ IFAC Symposium on System Identification ◦ IEEE International Conference on Smart Grid Communications (SmartGridComm) ◦ IEEE Workshop on Control and Modeling for Power Electronics (COMPEL) ◦ IEEE International Conference on Smart Grid Synchronized Measurements and Analytics (SGSMA) ◦ Iranian Smart Grid Conference (SGC) ◦ IEEE Global Conference on Signal and Information Processing (GlobalSIP) ◦ IEEE International Conference on Data Mining (ICDM) ◦ Greenmetrics (Sigmetrics) ◦ International School and Conference on Network Science (NetSci)

Selected Funding Review Panels

ERC Consolidator Grant Remote Referee ◦ Helmholtz Association of German Research Centres ◦ Swiss National Science Foundation (SNSF) ◦ SNSF Ambizione Energy ◦ German Research Foundation (DFG) ◦ DFG Emmy Noether-Programm ◦ DFG Priority Program Hybrid and multimodal energy systems: System theoretical methods for the transformation and operation of complex networks ◦ Deutsche Bundesstiftung Umwelt ◦ French National Research Agency (ANR) ◦ Netherlands Organisation for Scientific Research (NWO) ◦ Italian Ministry for Education University and Research (MIUR) ◦ National Research, Development and Innovation Office of Hungary ◦ Chilean National Science and Technology Commission

Selected Technical Committee Memberships

IFAC Technical Committee 1.5 Networked Systems ◦ IEEE CSS TC on System Identification and Adaptive Control ◦ IEEE CSS TC on Smart Grid ◦ Global Network of Synchrophasor Solutions Steering Committee

Selected Professional Affiliations

Senior Member, Institute for Electrical and Electronics Engineers (IEEE) ◦ Member, Society for Industrial and Applied Mathematics (SIAM) ◦ Member, International Federation of Automatic Control (IFAC)

Plenaries, Keynotes, & Invited Talks

- 2023 Plenary at European Research Network System Identification ◦ Plenary at International Conference on System Theory, Control and Computing ◦ Nordic Congress of Mathematicians ◦ POSTECH University ◦ Rutgers University ◦ Cranfield University
- 2022 Plenary at Leibniz MMS Days ◦ Fraunhofer ILES Hamburg ◦ 2 × National Renewable Energy Laboratory ◦ KTH Stockholm ◦ POSYTYF Webinar ◦ University of Nottingham
- 2021 Plenary at Programme Gaspard Monge Days ◦ Oberwolfach Workshop ◦ SIAM DS Workshop ◦ Sharif University ◦ UC San Diego ◦ SICC Workshop ◦ ECC Workshop ◦ Powertech Panel ◦ Control Meets Learning Virtual Seminar Series ◦ IFAC Optimal Control Seminar ◦ ETH Energy Week ◦ 2 × CDC Workshops
- 2020 Plenary at European Control Conference ◦ 2 × Peking University ◦ KTH Stockholm ◦ Technion ◦ Georgia Tech Energy Systems and Optimization Workshop ◦ Conference on Complex Systems ◦ CDC Workshop ◦ Distributed Estimation & Optimization in Dynamical Systems Online Seminar ◦ ECCE Workshop ◦ Workshop on Emerging Topics in Control of Power Systems ◦ National Renewable Energy Laboratory ◦ IFAC World Congress Workshop ◦ KTH Digital Future Series ◦ ECC Workshop ◦ ETH Zürich Symposium on Resilience & Performance of Networked Systems
- 2019 Plenary at Mediterranean Conference on Control and Automation ◦ Workshop on Resilient Control of Infrastructure Networks ◦ ECC Workshop ◦ ETH Zürich Learning & Adaptive Systems Lab Seminar ◦ ETH Zürich Robotic Systems Lab Seminar ◦ 2 × Isaac Newton Institute for Mathematical Sciences ◦ Innovative Optimization and Control Methods for Highly Distributed Autonomous Systems Workshop ◦ CU Boulder ◦ KTH Stockholm ◦ International Conference on Control, Instrumentation, and Automation Plenary
- 2018 Plenary at IFAC Workshop on Distributed Estimation and Control in Networked Systems ◦ Energy-Open Workshop ◦ International Workshop on Advanced Cooperative Systems ◦ Karlsruhe Institute of Technology ◦ UC Berkeley ◦ UC Santa Barbara ◦ Le Laboratoire GIPSA-lab ◦ RTE Workshop on Power Systems
- 2017 Melbourne Workshop on Future Power Systems ◦ Austria Institute of Technology ◦ CoNDyNet Workshop ◦ ETH Zürich Institute for Theoretical Studies ◦ Ruhr Universität Bochum ◦ Workshop on Optimization and Inference for Physical Flows on Networks ◦ Champéry Power Conference
- 2016 UC Berkeley ◦ National Renewable Energy Laboratory ◦ Plenary at Greenmetrics ◦ KTH Stockholm ◦ Institute for Mathematics and its Applications ◦ ETH Zürich Computer Science Departmental Talk ◦ ACC Workshop ◦ 2 × ECC Workshop ◦ Séminaire d'Automatique du Plateau de Saclay
- 2015 KAUST ◦ Skoltech ◦ École Polytechnique Fédérale de Lausanne ◦ Social Norms and Institutions Workshop ◦ Technical University Berlin ◦ Université Catholique de Louvain ◦ Swiss Federal Laboratories for Materials Science and Technology ◦ Grid Science Winter School & Conference
- 2014 University of Cambridge ◦ University of Oxford ◦ UC Los Angeles ◦ UC San Diego ◦ Stanford University ◦ CU Boulder ◦ National Renewable Energy Laboratory ◦ California Institute of Technology ◦ Swissgrid ◦ University of Padova ◦ Dagstuhl Workshop ◦ ABB Corporate Research Center ◦ ETH Zürich ◦ Lund University ◦ University of Minnesota ◦ ACC Workshop ◦ Rand Corporation
- 2013 University of Southern California ◦ 2 × Los Alamos Center for Nonlinear Studies ◦ Technical University

Munich ◦ ETH Zürich ◦ UC Los Angeles

2012 UI Urbana-Champaign ◦ University of Stuttgart ◦ Siemens ◦ 2 × Los Alamos Center for Nonlinear Studies
◦ ETH Zürich ◦ Optimization and Control for Smart Grids ◦ CDC Workshop ◦ UC Los Angeles

2011 UC Santa Barbara Institute for Energy Efficiency ◦ CDC Workshop ◦ Los Alamos Center for Nonlinear Studies

2010 University of Toronto ◦ Technical University Munich ◦ UC Santa Barbara ◦ California Institute of Technology

Journal Publications

- [J1] J. Björk, K.H. Johansson, and F. Dörfler. Dynamic virtual power plant design for fast frequency reserves: Coordinating hydro and wind. *IEEE Transactions on Control of Network Systems*, 10(3):1266–1278, September 2023.
- [J2] C. Feng, L. Huang, X. He, Y. Wang, F. Dörfler, and Q. Chen. Joint oscillation damping and inertia provision service for converter-interfaced generation. September 2023. Submitted. Available at <https://arxiv.org/abs/2309.01321>.
- [J3] V. Häberle, E. Prieto, A. Tayyebi, and F. Dörfler. Grid-forming and spatially distributed control design of dynamic virtual power plants. August 2023. In press. Available at <https://ieeexplore.ieee.org/document/10239108>.
- [J4] A. Tayyebi, A. Anta, and F. Dörfler. Hybrid angle control and almost global stability of grid-forming power converters. *IEEE Transactions on Automatic Control*, 68(7):3842–3857, July 2023.
- [J5] A. Tayyebi, D. Vettoretti, A. Anta, and F. Dörfler. Grid-forming hybrid angle control: Behavior, stability, variants and verification. July 2023. Submitted. Available at <https://arxiv.org/abs/2307.09398>.
- [J6] S. Shafieezadeh-Abadeh, L. Aolaritei, F. Dörfler, and D. Kuhn. New perspectives on regularization and computation in optimal transport-based distributionally robust optimization. June 2023. Submitted. Available at <https://arxiv.org/abs/2303.03900>.
- [J7] F. Dörfler and D. Groß. Control of low-inertia power systems. *Annual Review of Control, Robotics, and Autonomous Systems*, 6(1), May 2023.
- [J8] L. Huang, Z. Jianzhe, J. Lygeros, and F. Dörfler. Robust data-enabled predictive control: Tractable formulations and performance guarantees. *IEEE Transactions on Automatic Control*, 68(5):3163–3170, May 2023.
- [J9] E. Elokda, S. Bolognani, A. Censi, F. Dörfler, and E. Frazzoli. A self-contained Karma economy for the dynamic allocation of common resources. *Dynamic Games and Applications*, pages 1–33, April 2023.
- [J10] M. Picallo, S. Bolognani, and F. Dörfler. Predictive-sensitivity: Beyond singular perturbation for control design on multiple time scales. *IEEE Transactions on Automatic Control*, 68(4):2309–2324, April 2023.
- [J11] F. Dörfler, J. Coulson, and I. Markovskiy. Bridging direct & indirect data-driven control formulations via regularizations and relaxations. *IEEE Transactions on Automatic Control*, 68(2):883–897, January 2023.
- [J12] J.S. Brouillon, F. Dörfler, and G. Ferrari-Trecate. Regularization for distributionally robust state estimation and prediction. 7:2713–2718, 2023.
- [J13] J.S. Brouillon, E. Fabbiani, P. Nahata, F. Dörfler, and G. Ferrari-Trecate. Bayesian error-in-variables models for the identification of power networks. *IEEE Transactions on Smart Grid*, 14(22):1289–1299, 2023.

- [J14] J. Coulson, H.J. van Waarde, J. Lygeros, and F. Dörfler. A quantitative notion of persistency of excitation and the robust fundamental lemma. *IEEE Control Systems Letters*, 7:1243–1248, 2023.
- [J15] F. Dörfler, P. Tesi, and C. De Persis. On the certainty-equivalence approach to direct data-driven LQR design. *IEEE Transactions on Automatic Control*, 2023. In press. DOI 10.1109/TAC.2023.3253787.
- [J16] E. Elokda, C. Cenedese, K. Zhang, J. Lygeros, E. Frazzoli, and F. Dörfler. Carma: Fair and efficient bottleneck congestion management via non-tradable karma credits. 2023. Submitted. Available at <https://arxiv.org/abs/2208.07113>.
- [J17] X. He, V. Häberle, I. Subotic, and F. Dörfler. Nonlinear stability of complex droop control in converter-based power systems. *IEEE Control Systems Letters*, 7:1327–1332, 2023.
- [J18] L. Huang, D. Wang, H. Xin, P. Ju, X. Wang, K.H. Johansson, and F. Dörfler. Gain and phase: Decentralized stability conditions for power electronics-dominated power systems. 2023. Submitted.
- [J19] I. Markovskiy and F. Dörfler. Identifiability in the behavioral setting. *IEEE Transactions on Automatic Control*, 68(3):1667–1677, 2023.
- [J20] A. Martin, L. Furieri, F. Dörfler, and G. Ferrari-Trecate. On the guarantees of minimizing regret in receding horizon. 2023. Submitted. Available at <https://arxiv.org/abs/2306.14561>.
- [J21] H. Ossareh and F. Dörfler. Formula for estimating the frequency response of lti systems from noisy finite-length datasets. 2023. Submitted.
- [J22] G. Panagiotis, G. Belgioioso, C. Cenedese, M. Fochesato, J. Lygeros, and F. Dörfler. Big Hype: Best intervention in games via distributed hypergradient descent. 2023. Submitted. Available at <https://arxiv.org/abs/2303.01101>.
- [J23] M.K. Singh, S. Dhople, F. Dörfler, and G.B. Giannakis. Time-domain generalization of Kron reduction. *IEEE Control Systems Letters*, 7:259–264, 2023.
- [J24] G. Belgioioso, D. Liao-McPherson, M. Hudoba de Bady, S. Bolognani, R. Smith, J. Lygeros, and F. Dörfler. Online feedback equilibrium seeking. October 2022. Submitted. Available at <https://arxiv.org/abs/2210.12088>.
- [J25] V. Häberle, M.W. Fisher, E. Prieto, and F. Dörfler. Control design of dynamic virtual power plants: An adaptive divide-and-conquer approach. *IEEE Transactions on Power Systems*, 37(5):4040–4053, September 2022.
- [J26] M. Chen, D. Zhou, A. Tayyebi, E. Prieto, F. Dörfler, and F. Blaabjerg. Augmentation of generalized multivariable grid-forming control for power converters with cascaded controllers. August 2022. Submitted. Available at <https://arxiv.org/abs/2202.08639>.
- [J27] X. He, V. Häberle, and F. Dörfler. Complex-frequency synchronization of converter-based power systems. August 2022. Submitted. Available at <https://arxiv.org/abs/2208.13860>.
- [J28] I. Markovskiy, L. Huang, and F. Dörfler. Data-driven control based on behavioral approach: From theory to applications in power systems. August 2022. In press. Available at <https://imarkovs.github.io/tutorial.pdf>.
- [J29] L. Aolaritei, S. Shafieezadeh-Abadeh, and F. Dörfler. The performance of Wasserstein distributionally robust m-estimators in high dimensions. June 2022. Submitted. Available at <https://arxiv.org/abs/2206.13269>.
- [J30] W. Mei, G. Chen, F. Bullo, and F. Dörfler. Rethinking the micro-foundation of opinion dynamics: Rich consequences of an inconspicuous change of an inconspicuous change. *Physical Review Research*, 4(2):23213–23223, June 2022.
- [J31] I. Subotic, A. Hauswirth, and F. Dörfler. Quantitative sensitivity bounds for nonlinear programming and time-varying optimization. *IEEE Transactions on Automatic Control*, 67(7):2829–2842, June 2022.

- [J32] L. Huang, J. Coulson, J. Lygeros, and F. Dörfler. Decentralized data-enabled predictive control for power system oscillation damping. *IEEE Transactions on Control Systems Technology*, 30(3):1065–1077, May 2022.
- [J33] L. Aolaritei, N. Lanzetti, C. Hongruiyu, and F. Dörfler. Distributional uncertainty propagation via optimal transport. April 2022. Submitted. Available at <https://arxiv.org/abs/2205.00343>.
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Patents

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