

Linbin Huang

[Homepage](#), [Google Scholar](#), [Email](#)

EDUCATION

PostDoc Researcher **Sept. 2020 –**
Automatic Control Laboratory
Swiss Federal Institute of Technology (ETH) Zürich, Switzerland
Advisor: Prof. Florian Dörfler

Ph.D. in Electrical Engineering **Sept. 2015 – Jun. 2020**
College of Electrical Engineering, Zhejiang University, Hangzhou, China
Advisor: Prof. Huanhai Xin

Visiting Scientist **Nov. 2018 – Dec. 2019**
Automatic Control Laboratory
Swiss Federal Institute of Technology (ETH) Zürich, Switzerland
Advisor: Prof. Florian Dörfler

B.Eng. in Electrical Engineering **Sept. 2011 – Jun. 2015**
Zhejiang University, Hangzhou, China
Overall GPA: 3.86/4.0

RESEARCH INTERESTS Data-driven control; Optimal control;
Power systems stability; Control of power electronics; Renewable generation

AWARDS Finalist of Best Ph.D. Thesis of Zhejiang University (2020)
National Scholarship (2018, 2019)
Academic Rising Star Program of Zhejiang University (2019)
Excellent Student Awards (2019)
IEEE PESGM Best Conference Paper Award (2018)
Outstanding Graduates of Zhejiang University (Undergraduate period)

PROFESSIONAL SERVICE *Technical Reviewer in Journals:*
IEEE Transactions on Power Systems ◦ IEEE Transactions on Smart Grid ◦ IEEE Transactions on Power Electronics ◦ IEEE Transactions on Industrial Electronics ◦ IEEE Transactions on Energy Conversion ◦ IEEE Transactions on Sustainable Energy ◦ IEEE Journal of Emerging and Selected Topics in Power Electronics ◦ IEEE Transactions on Power Delivery ◦ IEEE Access ◦ International Journal of Electrical Power and Energy Systems ◦ IET Generation, Transmission & Distribution

Conference Session Chair/Co-Chair:
Session chair of “Data-Driven Control” in the 19th IFAC Symposium on System Identification (2021)

SELECTED PUBLICATIONS **Topic I: Data-Driven Control and Application in Power Systems**

[1] Linbin Huang, Jeremy Coulson, John Lygeros, and Florian Dörfler, “Decentralized data-enabled predictive control for power system oscillation damping.” IEEE Transactions on Control Systems Technology, early access, 2021.

[2] Linbin Huang, Jianzhe Zhen, John Lygeros, and Florian Dörfler, “Robust Data-Enabled Predictive Control: Tractable Formulations and Performance Guarantees.” arXiv preprint, arXiv:2105.07199, 2021.

- [3] Linbin Huang, Jianzhe Zhen, John Lygeros, and Florian Dörfler, “Quadratic regularization of data-enabled predictive control: Theory and application to power converter experiments.” in 19th IFAC Symposium on System Identification, 2021,
- [4] Linbin Huang, Jeremy Coulson, John Lygeros, and Florian Dörfler, “Data-enabled predictive control for grid-connected power converters.” 2019 IEEE 58th Conference on Decision and Control (CDC). IEEE, 2019.

Topic II: Grid-Forming Control

- [5] Linbin Huang, Huanhai Xin, and Florian Dörfler, “H-infinity Control of Grid-Connected Converters: Design, Objectives and Decentralized Stability Certificates,” IEEE Transactions on Smart Grid, vol. 11, no. 5, pp. 3805-3816, Sept. 2020.
- [6] Chaoran Yang, Linbin Huang, Huanhai Xin, Ping Ju, “Placing Grid-Forming Converters to Enhance Small Signal Stability of PLL-Integrated Power Systems.” IEEE Transactions on Power Systems, vol. 36, no. 4, pp. 3563 - 3573, Jul. 2021.
- [7] Linbin Huang, Huanhai Xin, Hui Yuan et al. “Damping effect of virtual synchronous machines provided by a Dynamical virtual impedance.” IEEE Transactions on Energy Conversion, vol. 36, no. 1, 570-573, Mar. 2021.
- [8] Linbin Huang, Huanhai Xin, Zhen Wang et al., “A Virtual Synchronous Control for Voltage Source Converters Utilizing Dynamics of DC-Link Capacitor to Realize Self-Synchronization,” IEEE Journal of Emerging and Selected Topics in Power Electronics, vol. 5, no. 4, pp. 1565-1577, Dec. 2017.
- [9] Linbin Huang, Huanhai Xin, Huan Yang et al., “Interconnecting Very Weak AC Systems by Multi-terminal VSC-HVDC Links with A Unified Virtual Synchronous Control,” IEEE Journal of Emerging and Selected Topics in Power Electronics, vol. 6, no. 3, pp.1041-1053, 2018.

Topic III: Grid-Synchronization Stability Analysis

- [10] Linbin Huang, Huanhai Xin, Zhiyi Li et al., “Grid-Synchronization Stability Analysis and Loop Shaping for PLL-based Power Converters With Different Reactive Power Control,” IEEE Transactions on Smart Grid, vol. 11, no. 1, pp. 501-516, Jan. 2020.
- [11] Linbin Huang, Huanhai Xin, Zhen Wang et al., “Transient Stability Analysis and Control Design of Droop-Controlled Voltage Source Converters Considering Current Limitation,” IEEE Transactions on Smart Grid, vol. 10, no. 1, pp.578-591, 2019.
- [12] Linbin Huang, Huanhai Xin and Zhen Wang, “Damping Low-Frequency Oscillations Through VSC-HVDC Stations Operated as Virtual Synchronous Machines,” IEEE Transactions on Power Electronics, vol. 34, no. 6, pp. 5803-5818, Jun. 2019.
- [13] Linbin Huang, Huanhai Xin, Leiqi Zhang et al., “Synchronization and Frequency Regulation of DFIG-Based Wind Turbine Generators With Synchronized Control,” IEEE Transactions on Energy Conversion, vol. 32, no. 3, pp. 1251-1262, Sept. 2017.
- [14] Huanhai Xin, Linbin Huang, Leiqi Zhang et al., “Synchronous Instability Mechanism of P-f Droop-Controlled Voltage Source Converter Caused by Current Saturation,” IEEE Transactions on Power Systems, vol. 31, no. 6, pp. 5206-5207, Nov. 2016.