

BOYOU JIANG (江博游)

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[Google Scholar](#) \diamond [Research Gate](#)

EDUCATION

Zhejiang University, Hangzhou, China

Sep. 2020 - Present

Ph.D. in Electrical Engineering

Supervisor: Prof. Chuangxin Guo

Aalborg University, Aalborg, Denmark

Dec. 2022 - Dec. 2023

Visiting Ph.D. in Department of Energy

Supervisor: Prof. Zhe Chen, *IEEE Fellow*

Huazhong University of Science and Technology, Wuhan, China

Sep. 2016 - Jun. 2020

B.S. in Electrical Engineering and Automation (GPA: 3.96/4.0, Rank: 1/172)

RESEARCH INTERESTS

Frequency-constrained dispatch of power system

- frequency response model; frequency security constraints; linearization methods
- active power support of wind turbines for enhanced system stability and efficiency

Power system operation under uncertainty

- optimal reserve allocation; stochastic and robust optimization methodologies

PUBLICATIONS

Papers under Review/Revision

- [1] **B. Jiang**, C. Guo, and Z. Chen, "Frequency constrained dispatch with energy reserve and virtual inertia from wind turbines," submitted to *IEEE Trans. on Sustain. Energy*, 2024 (under 1st revision).

Journal Papers

- [1] **B. Jiang**, C. Guo, and Z. Chen, "Frequency constrained unit commitment considering reserve provision of wind power," *Appl. Energy*, vol. 361, p. 122898, 2024. [[Link](#)]
- [2] **B. Jiang**, C. Guo and Z. Chen, "Modeling the coupling of rotor speed, primary frequency reserve and virtual inertia of wind turbines in frequency constrained look-ahead dispatch," *IEEE Trans. on Sustain. Energy*, vol. 15, no. 3, pp. 1885-1899, July 2024. [[Link](#)]
- [3] **B. Jiang**, H. Xu, C. Guo, Y. Shan and Z. Chen, "Frequency constrained wind and thermal power coordinated reserve optimization model considering decision dependent uncertainty and prohibited rotor speed zone," *Proceedings of the CSEE (in Chinese)*, early access. [[Link](#)]

- [4] L. Wang, **B. Jiang**, Y. Shi and Z. Chen, “Adaptive robust unit commitment of combined-cycle gas-turbine considering mode-based modeling of carbon capture plant,” *IEEE Access*, vol. 11, pp. 34510-34528, 2023. [[Link](#)]
- [5] H. Xu, **B. Jiang**, B. Feng, C. Guo, C. Wan, J. Yao and S. Yang, “The concept of economic operating region and its convex hull solution method for quantifying the influence of grid uncertainty on scheduling plan,” *Proceedings of the CSEE (in Chinese)*, vol. 43, no. 16, pp. 6288-6300, 2023. [[Link](#)]

Conference Papers

- [1] **B. Jiang**, H. Xu and C. Guo, “A two-stage maintenance-operation robust optimization model considering line forced outage,” in *2021 IEEE 5th Conference on Energy Internet and Energy System Integration (EI2)*, Taiyuan, China, 2021, pp. 1961-1966. [[Link](#)]

RESEARCH EXPERIENCE

Research on Resource-Meteorology-Environment Data Driven Multi-scale Planning and Risk Dispatch for New Power Systems Under Carbon-Power Collaboration (Supported by National Natural Science Foundation of China) Jan. 2023 - Present

Leading Student Researcher

- Developed a comprehensive framework for frequency-constrained dispatch, incorporating the dynamic adjustment capabilities of wind turbines and assessing their influence on both steady-state and transient-state power system operations.

Research on the Coordinated Optimization Technology With Source-Load Coordination for Economic Operation of Large Power Grids With Ultra-High Proportion of Electricity Received (Supported by State Grid Zhejiang Electric Power Company) Jun. 2021 - Dec. 2022

Leading Student Researcher

- Developed an advanced optimal scheduling model for interconnected power grids, integrating operational risk assessment and HVDC tie-line power adjustment to enhance system flexibility and facilitate the consumption of renewable energy.

Research and Application of Sub-synchronous Oscillation Risk Warning and Prevention and Control Technology in Eastern Inner Mongolia (Supported by State Grid Eastern Inner Mongolia Electric Power Company) Jun. 2021 - May 2024

Leading Student Researcher

- Developed an innovative frequency-constrained optimization model for the coordinated scheduling of wind and thermal power reserves, incorporating the prohibited rotor speed zone, derived from the principles of induction generator effect.

AWARDS

- **CSC Scholarship**
Awarded by China Scholarship Council Jun. 2022
- **Outstanding Undergraduate Thesis & Outstanding Undergraduate Graduate**
Awarded by Huazhong University of Science and Technology Jun. 2020

- **First Prize in the 10th Chinese College Student Mathematics Competition (Non-Mathematics Major Category)**
Awarded by Chinese Mathematical Society Nov. 2018
- **UHV Power Grid Scholarship**
Awarded by UHV Scholarship Fund Oct. 2018

SKILLS

- **Programming Languages:** MATLAB, Python, LaTeX
- **Simulation Tools:** MATLAB/Simulink