QI WANG

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RESEARCH INTERESTS

- Distributed optimization algorithms for large-scale nonconvex/convex and MIP problems, such as ACOPF and SCUC in electrical power systems
- Uncertainty modeling and data-driven optimization algorithms

EDUCATION

Tsinghua University **Beijing, China**
Ph.D. candidate in Electrical Engineering, Department of Electrical Engineering *2019.08 – 2024.06*
- Supervisor: Prof. Wenchuan Wu (***Fellow IEEE***)

Nanyang Technological University **Singapore**
Visiting Scholar in Electrical Engineering, School of Electrical and Electronic Engineering *2023.07 – 2023.08*
- Supervisor: Prof. Zhaoyang Dong (***Fellow IEEE***)

Harbin Institute of Technology **Harbin, China**
B.S. in Electrical Engineering, School of Electrical Engineering and Automation *2015.08 – 2019.06*
- **GPA: 3.98/4.0 (Rank 1/223)**
- Winner of Outstanding Graduate and Outstanding Thesis

PUBLICATIONS

- **Journals**

J1. **Q. Wang**, W. Wu, et al., "Asynchronous Decomposition Method for the Coordinated Operation of Virtual Power Plants," ***IEEE Transactions on Power Systems***, vol. 38, no. 1, pp. 767-782, Jan. 2023. (**Cited 16 times**)

J2. **Q. Wang**, C. Lin, W. Wu, et al., "A Nested Decomposition Method for the AC Optimal Power Flow of Hierarchical Electrical Power Grids," ***IEEE Transactions on Power Systems***, vol. 38, no. 3, pp. 2594-2609, May 2023. (**Cited 6 times**)

J3. **Q. Wang**, W. Wu, et al., "A Spatio-temporal Decomposition Method for the Coordinated Economic Dispatch of Integrated Transmission and Distribution Grids," ***IEEE Transactions on Power Systems***, vol. 39, no. 3, pp. 4835-4851, May 2024.

J4. **Q. Wang**, W. Wu, et al., "An Exact Relaxation Method for Complementarity Constraints of Energy Storages in Power Grid Optimization Problems," ***Applied Energy***, vol. 371, pp. 123592, Oct. 2024.

J5. X. Yang, H. Liu, W. Wu, **Q. Wang**, et al., "Reinforcement Learning with Safety Guarantees for Optimal Dispatch of Distributed Energy Resources in Active Distribution Networks," ***Journal of Modern Power Systems and Clean Energy***, doi: 10.35833/MPCE.2023.000893.

J6. L. SHAN, K. YAMANE, T. ONO, T. KAWAMURA, W. WU, Z. HU, **Q. Wang**, et al., "Distributed Energy Resource Management System with Improved Convergence," ***Applied Energy***, vol. 371, pp. 123566, Oct. 2024.

J7. S, Li, **Q. Wang***, et al., "Coordinated Scheduling of Distribution Networks and Microgrids Considering Heat Pump Loads and Distributed Photovoltaics," Electric Power, 2022, 55(09): 29-37. (*In Chinese*, **Cited 10 times**)

- **Patents (First Student Inventor, Partial)**

P1. W. Wu, **Q. Wang**, D. Zhang, C. Lin, S. Sun, H. Tang, P. Yu. A coordinated dispatch algorithm for integrated transmission and distribution grids, Chinese Patent, 2023115392940.

P2. B. Li, B. Wang, Y. Sun, W. Wu, **Q. Wang**, X. Fu, L. Guo, H. Sun, D. Li, C. Liu, J. Zhang. A coordinated robust scheduling method for multi-level grid considering flexible resources, Chinese Patent, 202211161694.8.

P3. B. Wang, G. Wang, W. Wu, J. Zhang, H. Sun, H. Liu, **Q. Wang**, Y. Xi, J. Xing, Z. Liu, H. Zhang, J. Zhang. Method for quantifying and assessing scheduling risk, American Patent, US18300497.

P4. B. Wang, Y. Du, W. Wu, H. Liu, H. Sun, G. Wang, Q. Guo, **Q. Wang**, C. Lin. Reactive power and voltage control method, American Patent, US17347036.

P5. B. Wang, Y. Du, W. Wu, H. Liu, H. Sun, G. Wang, Q. Guo, **Q. Wang**, Z. Liu. Online voltage control method for coordinating multi-type reactive power resources, American Patent, US17748535.

AWARDS (Partial)

Student Research Showcase Best Oral Presentation Award	**IEEE PCCC**	2024
Winners of IEEE Region 10 SAC Student Research Paper contest	**IEEE Region 10**	2024
Finalist Nomination (Top 1%)	**Ph.D. Dissertation Challenge of IEEE I&CPS Asia**	2023
Outstanding Oral Presentation Award	**Tsinghua-IET Electrical Engineering Academic Forum**	2022
Excellent Comprehensive Scholarship	**Tsinghua University**	2022
Outstanding Student Cadre (Top 1%)	**Tsinghua University**	2021
Silver Award for Student Social Practice Detachment (Detachment leader, Ranked **Top 2**)	Tsinghua University	2021
Outstanding Graduate	Harbin Institute of Technology	2019
Outstanding Thesis (Top 3%)	**Harbin Institute of Technology**	2019
'Three Good' Student (Top 0.5%)	**Education Department of Heilongjiang Province**	2018
Ultra-high voltage Scholarship (Top 1%)	**State Grid Corporation of China**	2016

ACADEMIC PRESENTATIONS (Partial)

- **Academic Exchange at Nanyang Technological University** *2023*
  A Nested Decomposition Method for the AC Optimal Power Flow of Hierarchical Electrical Power Grids
- **Ph.D. Dissertation Challenge of IEEE I&CPS Asia 2023** *2023*
  Hierarchical power grids coordinated dispatch: decomposition methods for non-convex, spatio-temporal coupling problems with imperfect communication
- **Tsinghua-IET Electrical Engineering Academic Forum** *2023*
  A Spatio-temporal Decomposition Method for the Coordinated Economic Dispatch of Integrated Transmission and Distribution Grids