Taoyi Qi

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Education

M.S. College of Electrical Engineering, Zhejiang University — **Hangzhou, China**
Supervisor: Professor Yi Ding & Research Professor Chengjin Ye — 09/2020-Present

B.S. College of Electrical Engineering, Zhejiang University — **Hangzhou, China**
Edison class honors — 09/2016.9-06/2020

Research Interests

- **Demand Response in Smart grid:** Modeling and control of flexible loads for providing various ancillary services.
- **Deep Reinforcement Learning in Power Systems:** Optimization of Electric Vehicles for improving power quality in distribution networks based on DRL method.

Publications

Journals

1. **Taoyi Qi**, Chengjin Ye, Yuming Zhao, Lingyang Li, Yi Ding. "Deep-Reinforcement-Learning-Based Charging Scheduling for Household Electric Vehicles in Active Distribution Network", **Journal of Modern Power Systems and Clean Energy**, Under Review. **(SCI)**
2. **Taoyi Qi**, Chaoming Zheng, Chengjin Ye, Peiyu He, Yi Ding, Chao Zhu, Weidong Bao, "Complementary Energy Storage Operation Strategy of Battery and Inverter Air Conditioners for Buildings with Integrated Photovoltaic System", **Power System Technology**, 2022, Online. (**EI**)
3. Yikai Sun, **QI Taoyi***, Lijun Zhang, Yishuang Hu, Chutian Yu, "Optimal Operation of Integrated Energy System Including Ice-Storage Air-Conditioning in Power Market", **Southern Power System Technology**, vol. 16, no. 04, pp. 95-104, Apr., 2022.
4. **Taoyi Qi**，Hongxun Hui，Lizhong Xu，Xiang Ma, Yi Ding. "Modelling and control of generalized demand response in micro-grids based on GridLAB-D", **Distribution & Utilization**，vol. 37, no. 7, pp. 3-10, Jul., 2020.
5. **Taoyi Qi**, Chengjin Ye, Yi Ding, "Utilizing Thermostatically Controlled Loads to Enhance Frequency Resilience for Power Systems Under Extreme Weather", to be submitted.

International Conference

6. Ruoyun Hu, Qi Ding, Qingjuan Wang, Ran Shen, Yifan Wang, and **Taoyi Qi***, "Optimal Charging Scheduling for Household Electric Vehicles under TOU Prices," 2022 5th International Conference on Energy, Electrical and Power Engineering (CEEPE), 2022, pp. 994-999.
7. Jianye Cui, **Taoyi Qi***, Yingwei Zhu, Kang Xie, Xiang Ma, "Modeling and Control of Multiple Flexible Loads in Demand Response Considering Renewable Energy Accommodation," 2020 IEEE 3rd Student Conference on Electrical Machines and Systems (SCEMS), 2020, pp. 908-912.
8. Xuan Yang, Xianghai Xu, Jianbing Yin, Jian Liu, Wei Wei, Zhipeng Zhang, Zhiyuan Chen, Haibo Lu, **Taoyi Qi*** and Kang Xie, "Regulation capacity evaluation for air conditioners considering operating status and occupant comfort", IOP Conference Series: Earth and Environmental Science. 2022, 983(1): 012010.

Research Projects

Friendly Interactive Smart Grid Between Supply-and Demand-Sides	Nanjing, China
Supported by Ministry of Science and Technology of China (No. 2016YFB0901100)	06/2020 –06/2021
Research on key technologies and business models of large-scale load resources participating in demand response	Jinhua, China
Supported by State Grid Zhejiang Electric Power Co., Ltd. (No. 5211JH1900M7)	06/2020-08/2022
Principal Student Investigator	
Research on demand response technology of massive residential users based on data-driven highly elastic power grid	Hangzhou, China
Supported by State Grid Zhejiang Electric Power Co., Ltd. (No. 5211YF200055)	04/2021-Present
Principal Student Investigator	
Research and application of key technologies for interaction between urban buildings and power grids for large-scale renewable energy consumption	Shenzhen, China
Supported by key science and technology project of China Southern Power Grid Corporation (No. 090000k52210134)	08/2021- Present
Principal Student Investigator	
Research on key technologies of virtual energy storage control in distribution network for power systems	Jiaxing, China
Supported by State Grid Zhejiang Electric Power Co., Ltd. (No. 5211JX190065)	10/2021- Present
Research on key technologies and business models of demand-side resource cluster response in the ubiquitous power Internet of Things environment	Hangzhou, China
Supported by State Grid Zhejiang Electric Power Co., Ltd. (No. 5211JY19000V)	07/2021-08/2022
Human-machine augmented large-scale multi-agent quantitative evaluation and autonomous evolution technology	Xi'an, China
Supported by National Key R&D Program of China (No.2021ZD0112700)	06/2021- Present
Principal Student Investigator	