Zhiyi Zhao

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Education

Tsinghua Univerisity **2024.09 – 2027.07 (Expected)**
M. S. in Electrical Engineering, Tsinghua-Berkeley Shenzhen Institude Shenzhen, China
South China University of Technology **2020.09 – 2024.07 (Expected)**
B. Eng. in Electrical Engineering, School of Electric Power Guangzhou, China

- **GPA:** 3.8 / 4.0, Advised by *Prof. Ying Xue*
- **Relevant Coursework:** Electric Circuits, Power System Analysis, Power Electronics, High Voltage Enginering, Automatic Control Theory, Electromechanics, Analog Electronics, Digital Electronics

Online courses: Optimization in modern power systems

- Gained preliminary knowledge in linear programming and quadratic programming
- Learned how to formulate economic dispatch problem and DC optimal power flow (DC-OPF) problem
- Got a preliminary understanding of AC-OPF problem and its non-convex nature

Publications

- **Zhiyi Zhao**, Ying Xue*, Zhaoxi Liu, Weiye Zheng, Shuyin Duan, Lei Yu, "A Novel Estimation Method for Maximum PV Hosting Capacity in Radial Distribution Networks using Bus Voltage and Electrical Distance," *Electric Power Systems Research.*

Awards

- China National Scholarship (Top 0.2% national-wide) **2023.10**
- China National Scholarship (Top 0.2% national-wide) **2022.10**

Research Experience

Auxiliary Frequency Control using LCC-HVDC **2022.12 – 2023.03**

- Replaced the AC transmission lines with LCC-HVDC for the four-machine two-area model in PSCAD
- Verified the decoupling effect of LCC-HVDC on the frequency of the two areas through simulation
- Gained preliminary insights into the auxiliary frequency control capability of LCC-HVDC through simulation

Photovoltaic Hosting Capacity Estimation in Radial Distribution Networks **2022.07 – 2022.11**

- Proposed a simple yet effective approach to estimate photovoltaic hosting capacity in radial distribution networks using bus voltage and line parameters
- Found that there exists a strong linear relationship between the square of bus voltage and PV output
- Found that the increment of line losses mainly happens on the branches from the substation to PV-connected bus

Project Experience

Multi-level Energy Exploitation Based on Hydrogen Storage **2022.03 – 2023.07**

- Applied the waste heat generated from electrolysis and fuel cell discharge to seawater desalination or integrated it into the heat network
- Synthesized industrial raw materials such as methanol by combining the hydrogen from the storage system with the captured carbon dioxide from thermal power plants

Skills

Language: IELTS: 7 (7.5 / 7.5 / 6 / 6.5)
Programming: C++, Python
Tools: Matlab/Simulink, RSCAD/PSCAD, TEX, Visio, Origin