

Zhiyi Zhao

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Education

Tsinghua University

M. S. in Electrical Engineering, [Tsinghua-Berkeley Shenzhen Institute](#)

2024.09 – 2027.07 (Expected)

Shenzhen, China

South China University of Technology

B. Eng. in Electrical Engineering, School of Electric Power

2020.09 – 2024.07 (Expected)

Guangzhou, China

- GPA: 3.8/4.0; Advised by [Prof. Ying Xue](#)

- **Relevant Coursework:** Electric Circuits, Power System Analysis, Power Electronics, High Voltage Engineering, 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