

Meiyi LI

Email: my546277681@163.com | Personal Webpage: meiyilipower.github.io

EDUCATION

Shanghai Jiao Tong University (SJTU)

Shanghai, China

• *M.Sc. in Electrical Engineering* | GPA: 3.56/4.0

Sep. 2017-Present

- Received waiver for the National Postgraduate Entrance Examination to enter SJTU (Ranking 10/170)
- **National Scholarship** for Outstanding Academic Achievements (**Highest scholarship, Top 1%, Ranking 1st among female students**)
- **Thesis:** “Stability Analysis and Optimal Control of Virtual Synchronous Generator Controlled Inverter-Interfaced Distributed Generators”

• *B.Sc. in Electrical Engineering and Automation* | **GPA: 4.01/4.3**

Sep. 2013-Jun. 2017

- Outstanding Engineers Honor Class (30 students selected from 170 candidates in the school)
- Merit student of SJTU (Top 3%)
- Outstanding Graduates of Shanghai (Top 5%)
- **Thesis:** “Transient Stability and Optimization Control of Microgrid”

PUBLICATIONS

- [1] **M Li**, W Huang, N Tai. A Dual-Adaptivity Inertia Control Strategy for Virtual Synchronous Generator. *IEEE Transactions on Power Systems* (Early Access), 2019. Published.
- [2] **M Li**, W Huang, N Tai. Transient Behavior Analysis of VSG-IIDG During Disturbances Considering the Current Limit Unit. *2019 IEEE Power and Energy Society General Meeting*, 2019. “**Best of the Best” Conference Paper (4/1200), the only Chinese master student won the prize in the past several years.**
- [3] **M Li**, W Huang, N Tai. Stability Analysis of VSG Under Grid Voltage Drop and Current Saturation. *IEEE Transactions on Power Systems*. Under Review.
- [4] **M Li**, W Huang, N Tai. Stability Analysis of the VSG-IIDG in the Microgrid: A Review. *Applied Energy*. Under Review.
- [5] **M Li**, W Huang, N Tai. Lyapunov-Based Large Signal Stability Assessment for VSG Controlled Inverter-Interfaced Distributed Generators. *Energies*, 2018. Published. **Cited by 8.**
- [6] **M Li**, W Huang, N Tai. Control Strategy for Inverter Interfaced Distributed Generator based on Virtual Synchronous Generator using Adaptive Inertia under Frequency Disturbances. *Power System Technology* (Chinese EI Journal), 2018. Accepted.
- [7] **M Li**, W Huang, N Tai. Surge Current Calculation and Limit Strategy of the IIDG during Loop Closing Operation in Distribution Networks. *2019 IEEE Sustainable Power & Energy Conference*, 2019. Oral.
- [8] **M Li**, W Huang, N Tai. Analysis and Limit Strategy of the Surge Current Caused by Closing-Loop Operation in the DG dominated Distribution Network. *2019 China Electrotechnical Society Academic Annual Conference*, 2019. Excellent Paper, recommended to be published on *Transactions of China Electrotechnical Society* (Chinese EI Journal).
- [9] Y Chen, Z Liu, **M Li**. Evaluation Index and Method of Active Distribution Network Based on Multi-source Data. *Electrical Automation* (Chinese Core Journal), 2019. Accepted.
- [10] M Yu, W Huang, N Tai, **M Li**. Adaptive Transient Stability Control Strategies of Photovoltaic Power Plants. *2019 China Electrotechnical Society Academic Annual Conference*, 2019. Excellent Paper.
- [11] **M Li**, W Huang, N Tai. Large Signal Stability of Autonomous Operation of A VSG-IIDG: Modeling and Analysis. Working paper.

RESEARCH EXPERIENCE

Research Assistant (RA), Key Laboratory of Control of Power Transmission and Conversion, Shanghai

Advisor: Prof. Dongliang Duan (Associate Professor, Department of Electrical & Computer Engineering, University of Wyoming)

- **Adaptive Control of the Inverter-interfaced Distributed Generator (DG) ([1])** Oct. 2018-Jun. 2019
 - Proposed a dual-adaptivity inertia control strategy for inverter-interfaced DGs based on the virtual synchronous generator control scheme to: 1) offer responsive and stable frequency support and 2) achieve the balance between power regulation and frequency regulation according to different operating conditions.
 - Derived the small-signal model of the controller and transfer functions of the DG's power and angular frequency to analyze the response characteristics (overshoot and resettling time).

RA, Research Center for Big Data and Artificial Intelligence Engineering and Technologies, Shanghai

Advisor: Prof. Robert (Caiming) Qiu (Professor, Department of Electrical Engineering, SJTU; IEEE Fellow)

- **Virtual Power Angle Stability of the Inverter-interfaced DG ([3])** Jun. 2019-Present
 - Analyzed the power-angle relationship of DGs considering the voltage regulation and line resistance to illustrate when the Q-V controller might have an enhanced or deteriorative effect on the stability of the DG system.
 - Revealed possible instabilities of DGs that were not reported previously by discussing two situations of current saturation: non-instant saturation and instant saturation.

RA, Department of Electrical Engineering, SJTU

Advisor: Prof. Nengling Tai (Professor and Chair, Department of Electrical Engineering, SJTU)

- **Project I: Stability Mechanism of DGs ([2], [4], [5], [6], [10], [11])** Sep. 2017-Present
 - Derived a Lyapunov function using Popov's theory to determine the large-signal stability domain of virtual synchronous generators.
 - Calculated the operation area of the DG controller according to: 1) phase and gain margin, 2) system capacity, 3) standards in accordance with power quality, and 4) characteristic roots.
- **Project II: Surge Current of DGs during Closing-Loop Operation ([7], [8])** Sep. 2018-Sep. 2019
 - Proposed a control scheme to calculate and limit the surge current of DGs (voltage source inverters and current source inverters) during closing-loop operation in the distribution network.

INDUSTRIAL COLLABORATIVE PROJECTS

Key Technologies Study on Control of Multi-microgrids

- **Electric Power Research Institute of Guangxi Province** Dec. 2017-Dec. 2018
 - Established a simulation platform of Guangxi No.1 middle school microgrid with three photovoltaic plants, a wind generator, three storage batteries, a diesel generator, and their controllers, et al.
 - Designed and implemented an automated software tool to determine the stability of microgrids based on MATLAB.

WORK EXPERIENCE

Intern Electrical Engineer, State Grid Corporation of China, Shanghai ([9]) Sep. 2018-Nov. 2018

- Led a team of 3 students and established the simulation platform of the grid-connected photovoltaic power system of the Songjiang District of Shanghai.
- Calculate and analyze the overvoltage and high impact current with the increase of penetration of photovoltaic power.

TECHNICAL SKILLS

Programming: MATLAB, Simulink, Power Systems Computer Aided Design/Electro-Magnetic Transient in DC System (PSCAD/EMTDC), Real Time Digital Simulator (RTDS), Python, C/C++

Standardized tests: GRE:327 (V158-Q169-A3.5), TOFEL:106 (R30-L28-S25-W23)