



Dr. Lingling Fan received her Bachelor and Master degrees in Electrical Engineering from Southeast University (Nanjing, China) in 1994 and 1997, respectively. She joined West Virginia University (Morgantown, West Virginia, USA) in 1998 and received her Ph.D. degree in Dec. 2001. Dr. Fan was with Midwest ISO (MISO) 2001 to 2007. She led projects on transmission system reliability, planning, operation and economics. From 2007 to 2009, Dr. Fan was with North Dakota State University (Fargo, North Dakota) as an assistant professor. Since 2009, Dr. Fan is with the University of South Florida (USF) at Tampa Florida. Currently, she is an associate professor at the Department of Electrical Engineering of USF.

Dr. Fan's research area covers power systems, power electronics, and electric machines. Her focus areas include dynamic systems and optimization. In dynamic systems area, her research covers modeling, analysis, estimation and control with applications in wind energy grid integration, microgrids, High Voltage Direct Current (HVDC) systems, energy storage systems, and phasor measurement unit (PMU). In optimization area, her research focuses on implementing optimization in smart building operation, energy storage operation, and power electronic converter controls.

Dr. Fan made notable contributions in modeling and control of doubly-fed induction generator based wind energy systems. She won an NSF award on exploring wind farms' converter capability for power system inter-area oscillation damping. She published a series of high impact papers on Type 3 wind farm subsynchronous resonance (SSR) dynamics. Most recently, Dr. Fan developed impedance based modeling techniques to identify HVDC system limits, which was documented in a 2013 paper in IEEE trans. Power Delivery. In PMU research, Dr. Fan's work has attracted the industry's interest. She has received industry contracts to develop estimation schemes using PMU data. To date, she has nurtured three Ph.D. graduates, with job placements in Alstom Grid R&D, ABB and PwrSolutions.

Dr. Fan was recognized for outstanding contribution to USF EE Department in July 2013 for her hard work and dedication to students and to advance the standing of the EE department. She was a recipient of outstanding achievement from MISO during her employment with MISO.

Dr. Fan is an active member in IEEE PES. She is a senior member of IEEE. She is an Editor of IEEE Transactions on Sustainable Energy. She is serving as the Technical Committee Program Chair (TCPC) for Power System Dynamic Performance (PSDP) subcommittee, Secretary of IEEE PES Power Engineering Education Committee Research subcommittee. She has been a reviewer for IEEE PES (power engineering society) and PELS (power electronics society) journals and conferences. Most recently, she has organized paper review for 2014 T&D conference.

### **Selected Relevant Publications:**

1. Z. Miao, L. Xu, V. Disfani, and **L. Fan**, "An SOC-based battery management system for microgrids," to appear, *IEEE Trans. Smart Grid*.

2. L. Xu and **L. Fan**, "Impedance based Resonance Analysis in a VSC-HVDC System," *IEEE Trans. Power Delivery*, vol. 28, no. 4, pp. 2209 – 2216, 2013.
3. **L. Fan**, Y. Wehbe, "EKF-based Real-Time Dynamic State and Parameter Estimation Using PMU," to appear, *Electric Power Systems Research*.
4. **L. Fan**, Z. Miao and Y. Wehbe, "Application of PMU Data for Dynamic State and Parameter Estimation," *IEEE Trans. Smart Grid*, vol. 4, no. 2, June 2013, pp. 1133 - 1141.
5. **L. Fan** and Z. Miao, "Nyquist-Stability-Criterion-Based SSR Explanation for Type-3 Wind Generators," *IEEE Tran. Energy Conversion*, vol. 17, no. 3, Sep. 2012, pp. 807-809.
6. H. Yin, **L. Fan**, and Z. Miao, "Fast Power Routing through HVDC," *IEEE Trans. Power Delivery*, vol. 27, no. 3, Jul. 2012, pp. 1432-1441.
7. **L. Fan** and Z. Miao, "Mitigating SSR using DFIG-based Wind Generation," *IEEE Trans. Sustainable Energy*, vol. 3, no. , Jul. 2012, pp. 349-358.
8. **L. Fan**, C. Zhu, Z. Miao and M. Hu, "Modal Analysis of Series Compensated DFIG-based Wind Farms," *IEEE Trans. on Energy Conversion*, vol. 26, no. 4, pp.1010-1020, Dec. 2011.
9. Z. Miao, A. Domijan, and **L. Fan**, "Investigation of Microgrids with Both Inverter Interfaced and Direct AC Connected Distributed Energy Resources," *IEEE Trans. on Power Delivery*, vol. 26, no. 3, pp. 1634-1642, July 2011.
10. **L. Fan**, H. Yin, and Z. Miao, "On Active/Reactive Power Modulation in DFIG-based Wind Generation for Inter-Area Oscillation Damping," *IEEE Trans. on Energy Conversion*, vol. 26, no. 2, pp. 513-521, June 2011.
11. **L. Fan**, H. Yin, and Z. Miao, "A Novel Control Scheme for DFIG-based Wind Energy Systems under Unbalanced Grid Condition," *Electric Power Systems Research*, vol. 81, no. 2, pp. 254-262, Feb. 2011.
12. Z. Miao, **L. Fan**, D. Osborn, S. Yuvarajan, "Wind Farms with HVDC Delivery in Inertial Response and Load Frequency Control," *IEEE Trans. on Energy Conversion*, vol. 25, no. 4, pp. 1171-1178, Dec. 2010.
13. **L. Fan**, R. Kavasseri, Z. Miao, C. Zhu, "Modeling of DFIG-based Wind Farms for SSR Analysis," *IEEE Trans. Power Delivery*, vol. 25, no. 4, pp. 2073-2082, Oct. 2010.
14. **L. Fan**, S. Yuvarajan, R. Kavasseri, "Harmonic Analysis of a DFIG for a Wind Energy Conversion System," *IEEE trans. Energy Conv.*, vol. 25, no. 1, pp. 181-190, March 2010
15. Z. Miao, **L. Fan**, D. Osborn, and S. Yuvarajan, "Control of DFIG based Wind Generation to Improve Inter-Area Oscillation Damping," *IEEE Transactions on Energy Conversion*, vol. 24, no. 2 , pp. 415-422, June 2009.

#### Contact Information

Dr. Lingling Fan  
 4202 E. Fowler Ave., ENB 118  
 Tampa, FL 33647  
[linglingfan@usf.edu](mailto:linglingfan@usf.edu)  
 Tel: (813)974-2031  
 Fax: (813)974-5250