



**Graduate Seminar (EEL 6936)**  
**Department of Electrical Engineering**  
**[http://ee.eng.usf.edu/Grad\\_Seminar](http://ee.eng.usf.edu/Grad_Seminar)**

**Prof. Lingling Fan, Associate Professor, PE**  
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**University of South Florida, Tampa, FL**

Friday, September 23, 2016, 2:00 p.m. - 3:00 p.m.

**Center for Urban Transportation Research (CUTR) Room 202**

## **Resonances and Stability in Microgrids**

### **Abstract**

Microgrids integrate wind/solar and energy storage devices through power electronic converters. Those converters are controlled to realize different functions, including real/reactive power control (e.g., a battery), or maximum power point tracking (solar PV or wind). Resonances and stability issues in a microgrid are very different compared to a power transmission grid. In this talk, high frequency resonances, sub-synchronous resonances and low frequency stability issues in microgrids are discussed. Modeling and analysis tools related to classic/modern systems and control are also presented.



### **Biography**

Dr. Lingling Fan received the Ph.D. degree in electrical engineering from West Virginia University, Morgantown, in 2001. Currently, she is an Associate Professor with the University of South Florida, Tampa, where she has been since 2009. Earlier she was also a Senior Engineer in the Transmission Asset Management Department, Midwest ISO, St. Paul, MN, from 2001 to 2007, and an Assistant Professor with North Dakota State University, Fargo, from 2007 to 2009. Her research interests include control, optimization, power systems and power electronics. Dr. Fan serves an editor for IEEE Trans. Sustainable Energy.