



## ESE Seminar Announcement

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Missouri University of Science and Technology**



Friday, March 27, 2015  
Green Hall, Room 0120  
11:10AM

### **DISTRIBUTED SCHEDULING OF DEMAND RESOURCES IN A CONGESTED NETWORK**

**Abstract:** This work proposes a distributed method to schedule supply and flexible demand in a congested network, accommodating diverse benefits of end-users. We look at two different time horizons to schedule supply and demand; a day ahead and an hour ahead, which we refer to as day-ahead and real-time clearing. For day-ahead clearing, we decompose the system-level problem and solve it in an iterative way to schedule supply and flexible demand over multiple time steps. However, after the day-ahead quantities are cleared and the actual consumption/production is to occur sooner, we use moving-horizon functional clearing. We show an application of this framework to the IEEE 30-bus test system with a large number of various air conditioning loads. The experiment shows effectiveness of the methods in managing congestion and in coping with unexpected conditions such as a rise in the weather temperature. This work was presented and awarded the best conference paper in the 2014 Power and Energy Society General Meeting.

**Bio:** Jhi-Young Joo is an assistant professor in Electrical and Computer Engineering at Missouri S&T. She received her Ph.D. in Electrical and Computer Engineering from Carnegie Mellon University in 2013. She received her Bachelor's and Master's degrees in ECE from Seoul National University, Korea. Her research interests are in modeling and optimization of power systems and market with a focus on utilizing distributed resources and demand response. She is a Member of the IEEE.