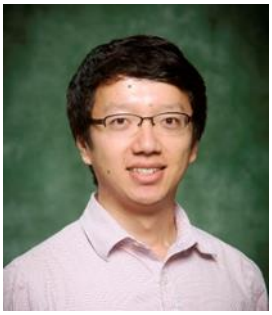
上海交通大学自动化系
Department of Automation
Shanghai Jiao Tong University

系统控制与信息处理教育部重点实验室
Key Laboratory of System Control and Information Processing, Ministry of Education

学术报告会

时间：2017年1月5日(周四)14:00
地点：电院群楼2-406会议室

On Distributed Control Systems and its Applications on Power System Analysis



Assistant Professor Zi-Ang Zhang (张子昂)
Binghamton University – State University of New York (SUNY)

Abstract:
From beats generated by cardiac pacemakers to the movement of planetary systems, the idea of synchronization of self-organizing oscillators that are coupled over networks links mathematics with natural phenomenon. Although this general idea was recognized decades ago, whether a particular system can synchronize and how to design controllers to help the synchronization remain unknown in many cases. Since thousands of independent generators across the nation, coupled by transmission lines, oscillate at the same frequency, numerous studies suggest that a power system is a perfect example of coupled oscillators. However, several major barriers need to be removed in order to bridge the gap between classical phase coupled oscillators and a realistic power system. This presentation will provide an overview of the development of distributed control algorithms in power system applications. The distributed energy management of power systems and the uses of Kuramoto model in power system analysis will be discussed.

Biography:
Zi-Ang (John) Zhang is an Assistant Professor in Electrical and Computer Engineering at Binghamton University. He received his B.S. degree from the Beijing Institute of Technology, an M.S. from Purdue University Calumet and a Ph.D. degree from North Carolina State University, all in Electrical Engineering. Before he joined Binghamton University, Dr. Zhang worked at ABB US Corporate Research Center as a Postdoc Fellow. He is a member of the Smart Grid task force of the IEEE Industrial Electronics Society, an associated editor of the electronic magazines on Industrial Electronics Technology News, and a task force member on the Decision Support Tools for Energy Storage Investment and Operations of the IEEE Power and Energy Society. His current research includes distributed control algorithms, coupled oscillator modeling and control, renewable energy integration and battery modeling.