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

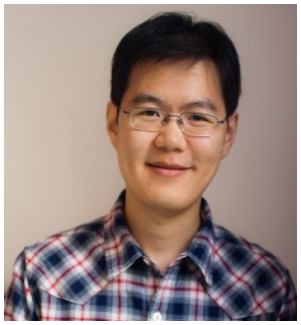
系统控制与信息处理教育部重点实验室
Key Laboratory of System Control and Information Processing, Ministry of Education

# 学术报告会

**时间：2013年1月7日(周一)10:00**

**地点：电院群楼2-410会议室**

## Secure Estimation and Control in Cyber-Physical Systems




**Dr. Yilin Mo**

**The Carnegie Mellon University**



**Abstract:**

The concept of Cyber-Physical System (CPS) refers to the embedding of sensing, communication, control and computation into the physical spaces. Today, CPSs can be found in areas as diverse as aerospace, automotive, chemical process control, civil infrastructure, energy, health-care, manufacturing and transportation, most of which are safety critical. Any successful attack to such kind of systems can cause major disruptions, leading to great economic losses and may even endanger human lives. The first-ever CPS malware (called Stuxnet) was found in July 2010 and has raised significant concerns about CPS security. The tight coupling between information and communication technologies and physical systems in CPS introduces new security concerns, requiring a rethinking and reexamining of the commonly used objectives and methods. In this talk, we provide two different cyber-physical threat models of CPS and analyze the performance of CPS under malicious attacks. We also develop new secure and resilient estimation and control algorithms to counter the attack.


**Biography:**

**Dr. Yilin Mo** received the Bachelor of Engineering degree from Department of Automation, Tsinghua University, Beijing, China, in 2007. He is currently pursuing the Ph.D. Degree in electrical and computer engineering from the Carnegie Mellon University. His research interests include secure control systems and networked control systems, with applications in sensor networks and power grid.