

# 学术报告会

时间：2013年10月18日(周五)10:00

地点：电院群楼2-410会议室

## Positive effects of network-induced delays on static output feedback tracking control

韩清龙教授

澳大利亚中昆士兰大学



### Abstract:

This seminar reports the positive effects of network-induced delays on output tracking control for a system that can not be stabilized by a static output feedback controller without a time-delay, but can be stabilized by a delayed static output feedback controller. For such a system, it is impossible to achieve a stable tracking control by using a non-delayed static output feedback controller. By inserting a communication network between the system and the static output feedback controller, network-induced delays are purposefully introduced in the feedback control loop to produce a stable and satisfactory tracking control. A new discontinuous complete Lyapunov-Krasovskii functional is constructed to derive a delay-dependent criterion for  $H_\infty$  tracking performance analysis. By applying a particle swarm optimization technique with feasibility of the derived criterion, a novel design algorithm is proposed to search for the minimum  $H_\infty$  tracking performance and the control gain. The effectiveness of the proposed method is shown by an illustrative example.

### Biography:

韩清龙教授(Professor Qing-Long Han)现为教育部长江学者讲座教授, 澳大利亚Central Queensland University教授, 博导。1994年于华东理工大学工业自动化专业获得博士学位, 1997年至1998年在法国Universit de Poitiers从事博士后研究, 1999年至2001年在美国Southern Illinois University任研究助理教授, 2001年至今在澳大利亚Central Queensland University任高级讲师、副教授和教授。目前担任澳大利亚中昆士兰大学高等教育学部, 副部长(研究与创新), 工程与技术学院, 正教授(讲座), 智能与网络化系统科学研究中心主任。2010年3月入选教育部长江学者讲座教授。