学术报告会

时间：**2012年11月29日(周四) 10:00-11:00**

地点：**电院群楼2-410会议室**

Robust Power Allocation for

Energy-Efficient Location-Aware Networks

Dr. William Wei-Liang Li

University of California, USA

Abstract:

Future wireless networks will support an increasing number of location-based applications and services. In wireless location-aware networks, mobile nodes (agents) typically obtain their positions through ranging with respect to nodes with known positions (anchors). The transmission power allocation not only affects network lifetime, throughput, and interference, but also determines the localization accuracy. In this talk, I will present an optimization framework for robust power allocation in network localization to tackle imperfect network parameters. In particular, we formulate the problem to minimize the squared position error bound (SPEB) and the maximum directional position error bound (mDPEB), respectively, both of which characterize the fundamental limits of localization accuracy. We show that such formulations can be efficiently solved via conic programming. Moreover, we design an efficient power allocation scheme that allows distributed computations among agents. The simulation results show that the proposed schemes significantly outperform uniform power allocation, and the robust schemes outperform their non-robust counterparts when the network parameters are subject to uncertainties.

Biography:

Dr. William Wei-Liang Li received his Ph.D. degree in Information Engineering from the Chinese University of Hong Kong in 2012, and a B.S. degree in Automatic Control Engineering from Shanghai Jiao Tong University in 2006. He joined the Department of Electrical and Computer Engineering, University of California, Santa Barbara in 2012, where he is currently a Postdoctoral Scholar. From 2009 to 2011, he was a visiting scholar at the Laboratory for Information and Decision Systems, Massachusetts Institute of Technology. His research interests include the applications of optimization and estimation theory in wireless communications and networking. Dr. Li has served as a TPC Co-Chair of ACM MobiHoc S3 Workshop in 2010, a TPC member of MIT 15th Annual LIDS Student Conference in 2010, IEEE ICCVE in 2012, and IEEE WCNC in 2013. He is currently a reviewer of numerous international journals and conferences. He received the Global Scholarship for Research Excellence from CUHK in 2009, and the Award of CUHK Postgraduate Student Grants for Overseas Academic Activities and in 2009 and 2011.