



SEMINAR ANNOUNCEMENT

Random Matrix Theory: A Wireless Communications Perspective

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Date : 20 October 2009 (Tuesday)
Time : 4 pm – 5 pm
Venue: SPMS-Executive Classroom 2, MAS-03-07
School of Physical and Mathematical Sciences

Random matrix theory (RMT) has become an important mathematical foundation for solving many engineering problems. In this talk, we will focus on the applications of RMT in wireless communications. An overview on the random matrix channels in wireless communications will be given first, including multiuser communications, multi-antenna communications and spectrum sensing in cognitive radios. Then, some recent results on applying RMT into each of these areas will be given.

Speaker Biography

Dr Ying-Chang Liang is presently a Senior Scientist in the Institute for Infocomm Research (I²R), Singapore. He holds adjunct associate professorship positions in Nanyang Technological University (NTU) and National University of Singapore (NUS), both in Singapore, and adjunct professorship position with University of Electronic Science & Technology of China (UESTC). He has been teaching graduate courses in NUS since 2004. From Dec 2002 to Dec 2003, Dr Liang was a visiting scholar with the Department of Electrical Engineering, Stanford University, CA, USA. His research interests include statistical signal processing, cognitive radio, dynamic spectrum access, reconfigurable signal processing for broadband communications, space-time wireless communications, wireless networking, and information theory, in which he has co-authored over 250 international journal/conference papers. He is the co-author of the book "Wireless Broadband Networks" (John Wiley & Sons Inc., March 2009) and the co-author (with Z.D. Bai and Z. Fang) of the book "Spectral Theory of Large Random Matrices and its Applications in Wireless Communications and Finance Statistics" (English version, University of Science & Technology of China (USTC) Press, June 2009). Dr Liang is presently an Associate Editor of *IEEE Transactions on Vehicular Technology*. He was an Associate Editor of *IEEE Transactions on Wireless Communications* from 2002 to 2005. He has also served as a guest editor for four special issues related to cognitive radio in IEEE and other prestigious journals. He received the Best Paper Awards from IEEE VTC-Fall'1999 and IEEE PIMRC'2005, and 2007 Institute of Engineers Singapore (IES) Prestigious Engineering Achievement Award. He served as a Co-Chair for the Thematic Program on Random matrix theory and its applications in statistics and wireless communications, organized by Institute for Mathematical Sciences, National University of Singapore, 2006.

Host: Prof. Pan Guangming, Division of Mathematical Sciences, School of Physical and Mathematical Sciences

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