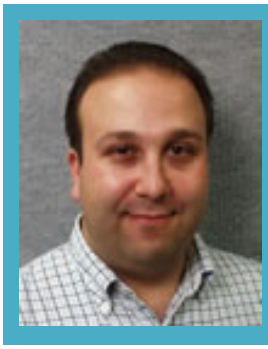
学术报告



Prof. Brian Scott Krongold

University of Melbourne

Towards Energy-Efficient Wireless Communications: An Overview

May 20 (Monday), 15:00-16:30, Room 1-415, FIT Building

Abstract: With the advent of the Internet and mobile telephony in the last 20 years, the telecommunications industry has been pushed to transmit as many bits as possible through the available spectrum. With continued exponential growth in traffic demand of users, and we now face a new problem: the energy consumption and resulting carbon footprint from communications. Currently, estimates are that communications contributes to approximately 2% of the planet's carbon footprint, but with increased demand of data rates and a growing number of users, this figure will be markedly higher in the next 10 years. A number of initiatives have begun to mitigate the energy consumption of all aspects of telecommunications, and this talk will highlight the potential solutions and research problems in designing energy-efficient wireless communication systems. Based on basic information theory, we will see that the topology of the network is an important factor in reducing energy consumption, and that receiver synchronization become more difficult than in spectrally-efficient wireless systems. A further result is the potential infrastructure-versus-energy tradeoff, which poses cost problems for implementing future energy-efficient networks

Brian Krongold received the B.S., M.S., and Ph.D. degrees in electrical engineering from the University of Illinois at Urbana-Champaign, in 1995, 1997 and 2001, respectively. From December 2001 to December 2004, he was a Research Fellow in the ARC Special Research Centre for Ultra-Broadband Information Networks (CUBIN) in the Department of Electrical and Electronic Engineering, University of Melbourne, Australia. He then received an ARC Postdoctoral Research Fellowship and held this from 2005 to 2007, followed by an appointment as a Senior Lecturer from 2008-2012. He is currently an Associate Professor at the University of Melbourne.

Dr. Krongold has interned at the Oak Ridge National Laboratory in the Summer of 1994, consulted at Bell Laboratories in New Jersey from January to August of 1995, and was with the Electronics and Telecommunications Research Institute, Taejon, South Korea, under a National Science Foundation summer research grant in 1998. During the first half of 2011, he was on sabbatical at Alcatel-Lucent Bell Laboratories, Murray Hill, NJ. His current research interests include multicarrier communications systems, energy-efficient communications, and signal processing and coding for optical communications. Dr. Krongold received the Best Paper Award at the 2006 European Wireless Conference and second prize in the Student Paper Contest at the 2001 Asilomar Conference on Signals, Systems, and Computers. His work on active constellation extension for orthogonal frequency-division multiplexing (OFDM) peak-to-average power ratio reduction is part of the DVB-T2 digital video broadcast standard. He was awarded a Victorian Young Tall Poppy Science Award in 2008, a national teaching citation in 2008 from the Australian Learning & Teaching Council, and the Edward Brown Award for Teaching Excellence in 2012 from the University of Melbourne

联系人：牛志升(62781423)