THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering

Seminar

On the Duality Between Slepian-Wolf Coding and Channel Coding

by

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Date	:	**18 December, 2009 (Friday)**
Time	:	**4:00-5:00pm**
Venue	:	**Room 833, Ho Sin Hang Engineering Building**
		The Chinese University of Hong Kong

Abstract

Slepian-Wolf coding, also known as distributed lossless source coding, is of fundamental importance for many emerging applications. In this talk, we will discuss the intimate connections between Slepian-Wolf coding and channel coding. We show that there exist two different dualities between Slepian-Wolf coding and channel coding: type-level duality and linear codebook-level duality. These two dualities together provide a comprehensive picture of Slepian-Wolf coding and clarify many subtle differences between linear block codes, fixed-rate nonlinear codes, and variable-rate codes. The implication of this work on Slepian-Wolf code design will also be discussed.

Biography

Jun Chen received the B.E. degree with honors in Communication Engineering from Shanghai Jiao Tong University, Shanghai, China, in 2001, and the M.S. and Ph.D. degrees in Electrical and Computer Engineering from Cornell University, Ithaca, NY in 2004 and 2006, respectively. He was a Postdoctoral Research Associate in the Coordinated Science Laboratory at the University of Illinois at Urbana-Champaign, Urbana, IL from 2005 to 2006, and a Josef Raviv Memorial Postdoctoral Fellow at the IBM Thomas J. Watson Research Center, Yorktown Heights, NY from 2006 to 2007. He is currently an Assistant Professor of Electrical and Computer Engineering at McMaster University, Hamilton, ON, Canada. He holds the Barber-Gennum Chair in Information Technology.

** ALL ARE WELCOME **

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