# The Chinese University of Hong Kong
## Shun Hing Institute of Advanced Engineering

### Distinguished Lecture Series 2009

# Achieving Full Diversity and Fast ML Decoding via Simple Analog Network Coding for Asynchronous Two-Way Relay Networks

by

# Professor Xiang-Gen Xia

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**Date:**    **13 August 2009, Thursday**
**Time:**    **11:30 a.m. – 12:30 p.m.**
**Venue:**   **Room 222, 2/F, Ho Sin Hang Engineering Building, CUHK**

## Abstracts

In this talk, we propose a simple analog network coding (or space-time coding) for asynchronous two-way relay networks.   It is based on the OFDM transmission.   At the receiver, it has orthogonal space-time block code (OSTBC) structure or quasi OSTBC structure and therefore has the fast decoding.

## Biography of the Speaker

**Xiang-Gen Xia** (M'97,S'00,F'09) received his B.S. degree in mathematics from Nanjing Normal University, Nanjing, China, and his M.S. degree in mathematics from Nankai University, Tianjin, China, and his Ph.D. degree in Electrical Engineering from the University of Southern California, Los Angeles, in 1983, 1986, and 1992, respectively.

He was a Senior/Research Staff Member at Hughes Research Laboratories, Malibu, California, during 1995-1996.   In September 1996, he joined the Department of Electrical and Computer Engineering, University of Delaware, Newark, Delaware, where he is the Charles Black Evans Professor.   He was a Visiting Professor at the Chinese University of Hong Kong during 2002-2003, where he is an Adjunct Professor. His current research interests include space-time coding, MIMO and OFDM systems, digital signal processing, and SAR and ISAR imaging.   Dr. Xia has about 190 refereed journal articles published and accepted, and 7 U.S. patents awarded and is the author of the book Modulated Coding for Inter-symbol Interference Channels (New York, Marcel Dekker, 2000).

Dr. Xia received the National Science Foundation (NSF) Faculty Early Career Development (CAREER) Program Award in 1997, the Office of Naval Research (ONR) Young Investigator Award in 1998, and the Outstanding Overseas Young Investigator Award from the National Nature Science Foundation of China in 2001. He also received the Outstanding Junior Faculty Award of the Engineering School of the University of Delaware in 2001. He is currently an Associate Editor of the IEEE Transactions on Wireless Communications, IEEE Transactions on Signal Processing, Signal Processing (EURASIP), and the Journal of Communications and Networks (JCN).   He was a guest editor of Space-Time Coding and Its Applications in the EURASIP Journal of Applied Signal Processing in 2002.   He served as an Associate Editor of the IEEE Transactions on Signal Processing during 1996 to 2003, the IEEE Transactions on Mobile Computing during 2001 to 2004, IEEE Transactions on Vehicular Technology during 2005 to 2008, the IEEE Signal Processing Letters during 2003 to 2007, and the EURASIP Journal of Applied Signal Processing during 2001 to 2004.   Dr. Xia served as a Member of the Signal Processing for Communications Committee from 2000 to 2005 and is currently a Member of the Sensor Array and Multichannel (SAM) Technical Committee (from 2004) in the IEEE Signal Processing Society.   He serves as IEEE Sensors Council Representative of IEEE Signal Processing Society (from 2002) and served as the Representative of IEEE Signal Processing Society to the Steering Committee for IEEE Transactions on Mobile Computing during 2005 to 2006.   Dr. Xia is Technical Program Chair of the Signal Processing Symp., Globecom 2007 in Washington D.C. and the General Co-Chair of ICASSP 2005 in Philadelphia.

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*Light refreshment will be served at 11:15 a.m. before the lecture*