THE CHINESE UNIVERSITY OF HONG KONG
Institute of Network Coding
and
Department of Information Engineering
Seminar

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Compute-and-Forward Network Coding Design Over Multi-Source Multi-Relay Channels

by

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Time : **2:30 - 3:30 pm**
Venue : **Room 833 , Ho Sin Hang Engineering Building**
The Chinese University of Hong Kong

Abstract

Network coding is a promising paradigm for modern communication networks by allowing intermediate nodes to mix messages received from multiple sources. Compute-and-forward strategy is one category of network coding in which a relay will decode and forward a linear combination of source messages according to the observed channel coefficients, based on the algebraic structure of lattice codes. The destination will recover all transmitted messages if enough linear equations are received. In this work, we design in a system level, the compute-and-forward network coding coefficients by Fincke-Pohst based candidate set searching algorithm and network coding system matrix constructing algorithm, such that by those proposed algorithms, the transmission rate of the multi-source multi-relay system is maximized. Numerical results demonstrate the effectiveness of our proposed algorithms.

Biography

Lili Wei received B.S. and M.S. degree from Shanghai Jiao Tong University, China in 1997 and 2000, Ph.D. degree from State University of New York at Buffalo, USA in 2008, respectively, all in electrical engineering.

From 2000 to 2001, she worked as a R&D engineer in Wuhan Research Institute of Posts and Telecommunications, China. Then she was with the Chinese Academy of Telecommunication Technology, Beijing, China and worked on the development of 3G TD-SCDMA wireless communication systems until August 2003. She is now a Postdoc Fellow in Shanghai Jiao Tong University, China. Her research interests include wireless communications, signal processing algorithms, cooperative and adaptive communication and networking techniques and optimizations.

ALL ARE WELCOME

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