



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



## Two Applications of Physical Layer Network Coding in Multi-hop Wireless Networks

by

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**Time : 11:30 am - 12:30 pm**

**Venue : Room 833, Ho Sin Hang Engineering Building  
The Chinese University of Hong Kong**

### Abstract

Physical layer network coding (PNC) is a relatively new technique that performs network coding at the physical layer, by viewing overlapping data transmissions as their linear combinations. While existing research on PNC usually focuses on simple network topologies (e.g., the two way relay channel), it appears promising to further explore the opportunities of applying PNC in a large, general, multi-hop wireless network. This talk covers two projects along this direction. In the first project, we show how PNC can be combined with signal alignment (SA), another technique inspired from interference alignment (IA), for application in MIMO wireless networks. In the second project, we advocate Buddy Routing, a pair-to-pair wireless routing paradigm enabled by PNC, in favor of the traditional node-to-node routing schemes, in a large scale wireless sensor network or NANO network.

### Biography

Ruiting Zhou is a MSc student at the Department of Computer Science, University of Calgary, Canada. Previously, she received a BE degree in Communication Engineering from Nanjing University of Post and Telecommunication in 2007, and a MS degree in Telecommunication from Hong Kong University of Science and Technology in 2008. She was with Shinetown Telecommunication Ltd (Hong Kong) during 2008-2010. Her research interests are in wireless networking and communications. Ruiting is a student member of IEEE.

**\*\*ALL ARE WELCOME \*\***