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

Network Interference Management
via Interference Alignment

by

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Date   :   **25 September 2012 (Tuesday)**
Time   :   **2:30 - 3:30 pm**
Venue   :   **Room 1009, William M. W. Mong Engineering Building**
              The Chinese University of Hong Kong

Abstract

As a fundamental concept of wireless networks, the capacity is of interest in communications and the information theory. For multiuser wireless networks, inter-user interference is an unavoidable nature due to concurrent transmissions. How to deal with interference in multiuser wireless networks is essential to exploring the channel capacity. Recently, a new class of signal multiplexing techniques, called interference alignment, has generated much interest due to its remarkable potential to provide higher achievable data rate. In this talk, we will introduce some recent results on various wireless networks via interference alignment to establish the channel capacity (in the degrees of freedom sense). In general, this talk mainly covers channel phase alignment, interference alignment with channel uncertainty, blind interference alignment, and K-user MIMO Gaussian interference channel through subspace alignment chains and genie chains. All the new insights behind these examples may point to the direction of the future wireless communications development.

Biography

Chenwei Wang received the B.S. degree in Information Engineering and the M.S. degree in Communications and Information systems from Beijing University of Posts and Telecommunications, Beijing, China, in 2005 and 2008, respectively. Since 2008 fall, he has been working towards the Ph.D. degree under the supervision of Prof. Syed Ali Jafar at the University of California, Irvine (UC Irvine). His current research interests include the network information theory, wireless communications and networks. He was an intern with the Research, Technology and Platforms Group at Nokia Siemens Networks, Beijing in 2008, and the Network Innovation Lab of the DOCOMO USA Labs, Palo Alto, California in 2010. Mr. Wang was a recipient of China Hewlett-Packard Distinguished Student Scholarship in 2007. He was also a recipient of the UC Irvine Graduate Fellowship for the year 2008 - 2009.

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