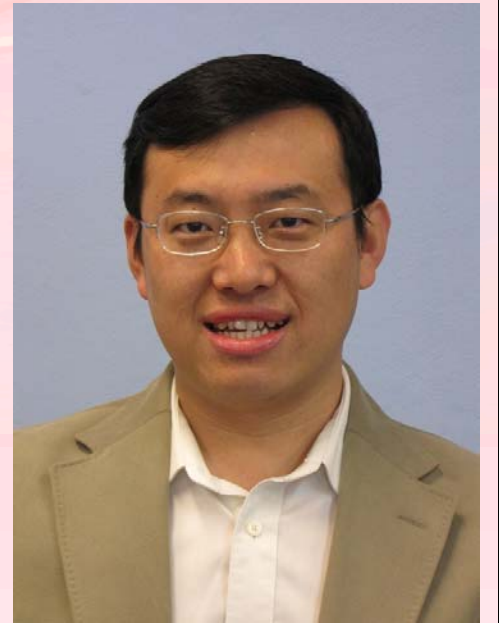


Space-Time Coding for MIMO Wireless Network

by

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Venue: Room 222, 2/F, Ho Sin Hang Engineering Building, CUHK

Abstract

For point-to-point MIMO wireless communications, space-time coding has been developed in the last decade to achieve the full diversity and high code rate, such as Alamouti code, Golden Code, Silver Code, Perfect space-time code, etc. In this talk, I will present our recent work on space-time code designs for MIMO wireless networks, including interference channels and X channels, where multiple users each with M antennas communicate with multiple receivers each with N antennas simultaneously. A group interference cancellation algorithm is applied at each receiver to eliminate the interference from all undesired transmitters. A systematic design of space-time codes is proposed for each user to achieve full diversity, i.e., MN , for interference channels and X channels, respectively.

Biography of the Speaker

Wei Zhang received the PhD degree in Electronic Engineering from the Chinese University of Hong Kong in 2005. He was Research Fellow at Hong Kong University of Science and Technology in 2006-2008. Since May 2008, he has been with the School of Electrical Engineering and Telecommunications, The University of New South Wales, Sydney, Australia, where he is currently Associate Professor.

His current research interests include cognitive radio, cooperative communications, space-time coding, and multiuser MIMO. He received the best paper award at the IEEE Globecom 2007 and the IEEE Communications Society Asia-Pacific Outstanding Young Researcher Award in 2009. He is an Editor of IEEE Transactions on Wireless Communications and an Editor of IEEE Journal on Selected Areas in Communications (Cognitive Radio Series). He serves as TPC Co-Chair of Communications Theory Symposium of IEEE ICC 2011 and TPC Co-Chair of Wireless Communication Symposium of IEEE ICC 2013.

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