Robust Precoding and Postcoding for Multicell Multiuser Transmission

Abstract: The problem of precoding and postcoding design for multicell multiuser downlink transmissions has been extensively studied in the literature. Most of existing algorithms assume perfect channel state information (CSI) is available for the transceiver designs. Recently, a few studies have addressed the problem of robust precoding and postcoding designs using imperfect CSI. However, the robust transceiver design algorithms entail doubly iterative procedures which give rise to high-complexity precoding and postcoding designs. In this talk, we present the formulation of a low-complexity transceiver design algorithm by deriving a closed-form solution of Lagrange multipliers which helps to avoid the use of doubly iterative design procedures. The proposed algorithm offers a lower complexity robust transceiver design without scarificing significant performance as compared to existing ones in the literature.

Biography: **Hung Nguyen-Le** received the B.Eng. degree and the M.Eng. degree in Electrical Engineering from Hochiminh City University of Technology, Vietnam, in 2001 and 2003, respectively. He obtained the Ph.D. degree in Electrical Engineering from the National University of Singapore in 2008. From 2008 to 2010, he worked as a Postdoctoral Research Fellow at the Department of Electrical and Computer Engineering, McGill University, Montreal, Canada. Since 2010, he has been with the Department of Electronics and Telecommunications Engineering, the University of Danang, University of Science and Technology, Vietnam. Since 2013, he has been with the Department of Science, Technology and Environment, the University of Danang where he is currently an associate professor. His research interests include array signal processing, multiuser/multicell transmissions, channel estimation and synchronization in broadband wireless communications.