THE CHINESE UNIVERSITY OF HONG KONG
Department of Information Engineering
Seminar

Extreme Spatial Multiplexing:
A Fluid Antenna System Approach
By
Prof. Kai Kit WONG
University College London, UK

Date　:　**3 June 2024 (Monday)**

Time　:　**4:00pm – 5:00pm**

Venue　:　**Rm 801, Ho Sin Hang Engineering Building, CUHK**

Abstract

Fluid antenna system (FAS) represents shape-flexible position-flexible antenna technologies for wireless communications and has recently emerged as a new degree of freedom for wireless communication design and optimization. The unique feature of FAS also changes the way in which interference is mitigated. In this talk, we will first take a closer look at massive multiuser MIMO (multiple-input multiple-output) and discuss why massive MIMO alone cannot be a feasible solution for extreme spatial multiplexing of an enormous number of users. We then present how FAS at each user can reduce the burden of the base station and enable massive MIMO to handle a huge number of users with little channel state information (CSI) at the base station. The results reveal that 1000 of users can be served on the same physical data channel if massive MIMO combines with FAS. The talk will be concluded by sharing some recent updates on the implementation of FAS.

Biography

(Kit) Kai-Kit Wong received the BEng, the MPhil, and the PhD degrees, all in Electrical and Electronic Engineering, from the Hong Kong University of Science and Technology, Hong Kong, in 1996, 1998, and 2001, respectively. He is Chair Professor of Wireless Communications at the Department of Electronic and Electrical Engineering, University College London. His current research centers around 6G mobile communications. He is one of the early researchers who proposed multiuser MIMO. His first paper on multiuser MIMO was published in WCNC 2000 which appeared to be the first ever research paper on this topic. He is Fellow of IEEE and IET. He served as the Editor-in-Chief for IEEE Wireless Communications Letters between 2020 and 2023.

** ALL ARE WELCOME **

Host: Prof. ZHANG Yingjun Angela (Tel: 3943-8465, Email: yjzhang@ie.cuhk.edu.hk)

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