

学术报告

ACADEMIC LECTURE



题目: On the Precoding for Multi-Cell Massive MIMO Systems with Distributed Antenna Subarrays

时间: 2016年8月10日 (周三) 上午10:00-11:00

地点: 信电楼117

报告人: Prof. Hai Lin, Osaka Prefecture University

专家介绍: Hai Lin received the B.E. degree from Shanghai JiaoTong University, China, in 1993, the M.E. degree from University of the Ryukyus, Japan, in 2000, and the Dr. Eng. degree from Osaka Prefecture University, Japan, in 2005. Since 2000, he was a research associate in the Graduate School of Engineering, Osaka Prefecture University, where now he is an associate professor.

Dr. Lin has acted many times as symposium co-chair and technical program committee member for IEEE ICC, GLOBECOM, WCNC, VTC, etc. Dr. Lin is an Editor of the IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS, and an Associate Editor of the IEEE TRANSACTIONS ON VEHICULAR TECHNOLOGY. His research interests are in signal processing for communications, wireless communications, and statistical signal processing. He is a member of the IEICE and a senior member of the IEEE.

报告内容: A pilot contamination elimination (PCE) precoding was recently proposed for multi-cell massive MIMO systems with distributed antenna subarrays, where the number of subarrays is required to be not less than the number of users. In this study, we consider practical scenario of insufficient number of subarrays, and propose a corresponding PCE precoding scheme. The key idea of the proposed scheme is to utilize multiple pilots in one cell rather than single pilot in the original scheme. It is shown that by separating users into multiple groups according to the associated pilots, multiple downsized equivalent MIMO channels can be obtained, which linearly reduces the required number of subarrays and therefore enables the PCE precoding. This linear relation based interpretation also introduces a new optimization problem of finding subarray power normalization factors to maximize signal-to-interference-plus-noise ratio, where an optimized solution is proposed. Finally, simulation results confirm the validity of the proposed scheme.

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