数学与系统科学研究院

计算数学所学术报告

报告人：**Prof. Chong-Yung Chi**（祁忠勇）

(Institute of Communications Engineering, Department of Electrical Engineering National Tsing Hua University, Hsinchu, Taiwan)

报告题目：

Efficient Beamforming Algorithms for Outage Constrained Weighted Sum-Rate Maximization in MISO Interference Channel

邀请人：　刘亚锋 博士

报告时间：**2013 年 7 月 23 日（周二）**

下午 15:30-16:30

报告地点：　科技综合楼三层 **311**

计算数学所报告厅

Abstract：

The beamforming design for weighted sum rate maximization in a multiple-input single-output (MISO) interference channel (IFC) with only channel distribution information (CDI) available at the transmitters has drawn extensive attention recently. In this talk, we present some new results on the transmit beamforming design under individual transmit power constraints and rate outage constraints. First of all, a recently proposed successive convex approximation (SCA) algorithm to search for a stationary solution in polynomial time is introduced. In spite of good performance of the SCA algorithm, it is computationally too expensive to handle the problem instances with a large number of transmitters and receivers. Then we prove that the considered design problem is NP-hard in general. Then we present a more efficient approximation algorithm based on the idea of interference pricing. The simulation results demonstrate that the pricing-based algorithm yields almost the same performance as the SCA algorithm, while the former is much more computationally efficient than the latter, thereby leading to more practical usefulness.

E-mail: cychi@ee.nthu.edu.tw; http://www.ee.nthu.edu.tw/cychi/

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