数学与系统科学研究院

计算数学所学术报告

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报告题目：

Beyond NOMA: Rate-Splitting and Robust Interference Management

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报告时间：2019 年 12 月 23 日（周一）

下午 16:00-17:00

报告地点： 科技综合楼三层

311 报告厅

Abstract：

To efficiently cope with the high throughput, reliability, heterogeneity of Quality-of-Service (QoS), and massive connectivity requirements of future MIMO wireless networks, multiple access and multiuser communication system design need to depart from two conventional and extreme interference management strategies, namely fully treat interference as noise (as commonly used in 4G/5G, MU-MIMO, CoMP, Massive MIMO, millimetre wave MIMO) and fully decode interference (as in Non-Orthogonal Multiple Access - NOMA).

This talk is dedicated to the theory and applications of general and powerful transmission frameworks based on Rate-Splitting (RS) and Robust Interference Management (RIM). RS splits messages into common and private parts so as to decode part of the interference and in treat the remaining part of the interference as noise. This enables RS to softly bridge and therefore reconcile the two extreme strategies of fully decode interference and treat interference as noise and provide room for spectral efficiency, energy efficiency and QoS enhancements in a wide range of network loads and user deployments, robustness against imperfect Channel State Information at the Transmitter (CSIT), as well as feedback overhead and complexity reduction.

RS provides a powerful framework for the design and optimization of non-orthogonal transmission, multiple access, and interference management strategies. Thanks to its versatility, RS has the potential to tackle challenges of modern communication systems and is a gold mine of research problems for academia and industry, spanning fundamental limits, optimization, PHY and MAC layers, and standardization.

This talk will share new ideas, and recent developments on emerging RS and RIM for beyond 5G networks.

欢迎大家参加！