



北京大学量子材料科学中心

International Center for Quantum Materials, PKU

Weekly Seminar

Randomized quantum measurements in quantum information processing

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复旦大学



Time: 3:00 pm, Nov.12, 2025 (Wednesday)

时间: 2025年11月12日 (周三) 下午3:00

Venue: Room w563, Physics building, Peking University

地点: 北京大学物理楼, 西563会议室

Abstract

Quantum measurements are the key for extracting information from quantum systems and for connecting the quantum world with the classical world. For many applications in quantum information processing, randomized measurements have proved to be much more efficient in information extraction. In this talk I will discuss the applications of randomized measurements in various tasks, including quantum state verification, fidelity estimation, entanglement certification, and the learning of unitary channels. In addition, I will explore the efficiency limits of these tasks and highlight the critical role of nonstabilizerness (magic). The talk will conclude with several open problems.

About the speaker

朱黄俊, 先后在浙江大学物理系、北京大学物理学院、和新加坡国立大学量子技术中心获学士、硕士、和博士学位。之后在加拿大圆周理论物理研究所和德国科隆大学理论物理研究所从事博士后研究。2018年1月至今在复旦大学物理学系任研究员。主要研究领域为量子信息基础理论, 主要包括量子测量、量子刻画与验证、和盲量子计算等。