

中国科学院数学与系统科学研究院

量子论与信息论

学术报告

报告题目: An Introduction to Symmetric Measurements and Mutually Unbiased Frames

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时间: 2024年4月12日 (星期五) 上午11:00-12:00

地点: 数学与系统科学研究院 南楼 620

摘要: Highly symmetric quantum measurements, due to their exceptional properties and profound structure, are playing an increasingly important role in quantum information theory and quantum technology. In this talk, we first focus on a class of symmetric measurements, and introduce their important properties, construction as well as related applications in quantum information. Then we introduce the most general notion of unbiasedness for sets composed by linearly independent vectors: Mutually unbiased frames. Interestingly, this formalism can be applied to the existence problem of the symmetric informationally complete positive operator valued measures (SIC-POVMs) in arbitrary dimensions (Zauner's conjectures), and allowed us to reveal some remarkable properties about SIC-POVMs.