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Julia Kempe: Battling Decoherence, from quantum error correction to the three-electron qubit

mercredi 7 juin 2017 14:15 (1 heure)

In this talk we give a brief survey on ways to encode quantum information in order to protect it against decoherence and noise. We will give a quick overview of quantum error correction with it's challenges and applicability, and then describe an alternative way to avoid decoherence: decoherence-free subspaces. We will focus on the 3-qubit exchange qubit and also give a surprising connection to encoded universality. This talk is mostly a survey of results obtained in the last decades, yet we will broach recent applications of the "three-electron qubit" in quantum dots.