MP 20: Quantum Information II

Zeit: Donnerstag 14:00–14:50 Raum: 30.45: 201

Hauptvortrag MP 20.1 Do 14:00 30.45: 201

Entangled? — •Matthias Christandl — ETH Zurich

A quantum state is entangled if it cannot be described by classical correlations alone. Entangled states are responsible for the security of quantum cryptography, the speed-up in quantum computation and properties of many physical systems. But if an experimenter has determined the quantum state of his system, how can he find out whether or not the state is in fact entangled? Answering this question has kept the field of quantum information theory busy since its beginning. After an introduction to the subject, I will explain the fastest way of determining when a state is entangled, a result recently obtained in joint work with Fernando Brandao and Jon Yard.