PHYSIKALISCHES KOLLOQUIUM

Sommersemester 2021

Das Kolloquium findet (soweit unten nicht anders angegeben) jeweils montags **jeweils montags um 17:15 Uhr online via Zoom** statt.
(Der jeweilige Link wird noch zur Verfügung gestellt.).

14.06.2021

Vorstellungsvortrag im Rahmen des Habilitationsverfahrens

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Quantum dots for quantum network applications

Abstract

Quantum dots have been shown to be bright sources of single photons. However, for quantum network schemes entanglement is required and single photons are not sufficient. Entanglement of photons and local quantum memories to build memory based quantum repeaters is a possible path towards building a quantum network. An alternative approach, the so called memory-less quantum repeater needs complex entangled photonic states, so called cluster states, as a resource.

In this talk, I will introduce the concept of communication with quantum security and show why and how this can be expanded to quantum networks. I will show the advances and challenges of using quantum dots in a memory based quantum repeaters as well as how to possibly use them to generate photonic cluster states.

Für die Dozentinnen bzw. Dozenten der Fakultät

Prof. Dr. Hankiewicz, Prof Dr. Höfling, PD. Dr. Meyer, Prof Dr. Sing und Hr. Frerichs