

Abstract Submitted
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A single ion coupled to a UV fiber-cavity HENDRIK-MARTEN MEYER, TIMOTHY BALLANCE, ASHWIN BODDETI, PASCAL KOBEL, KILIAN KLUGE, Physikalisches Institut, University of Bonn, Germany, JAKOB REICHEL, Laboratoire Kastler Brossel, ENS Paris, France, MICHAEL KÖHL, Physikalisches Institut, University of Bonn, Germany — Trapped ions offer long trapping and coherence times, which is why they are of great interest for the use as stationary qubits in a quantum network. Here we investigate the integration of fiber based cavities into ion traps, which due to their small mode volume and direct coupling to a single mode fiber present an efficient interface between single ions and single photons. In the past, ions and fiber-cavities have been successfully combined in the infra-red spectral range. Since ions typically have their strongest dipole transition in the ultra-violet (UV), the extension of fiber cavities to work in the UV is necessary. We will present our latest results on trapping Ytterbium ions inside approximately 150 micro-meter long fiber-cavities, which are resonant with the S-P electric dipole transition at 370nm.

Hendrik-Marten Meyer
Physikalisches Institut, University of Bonn, Germany

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