

SONDERSEMINAR
MPQ/LMU

am: Freitag, 1. Juli 2011

Uhrzeit: 10:00 Uhr s.t.

spricht: B.sc. Evan Meyer-Scott
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Thema: Quantum Key Distribution Near and Far

Ort: Lehrstuhl Professor Theodor W. Hänsch, Diskussionsraum
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gez. Prof. T.W. Hänsch

ABSTRACT

Today, I will present two recent experiments in our quantum key distribution laboratory at the Institute for Quantum Computing.

First, we performed entangled QKD using 800 nm photons in standard (active) telecommunications optical fibres. The large separation in wavelength between quantum and classical traffic prevents cross-talk allowing good compatibility with existing infrastructure. Secondly, we demonstrated the key components of a QKD system capable of coping with the extremely high loss on a satellite uplink. Such an uplink with a satellite as a trusted node would allow worldwide QKD and shatter the ground-based distance limit.

I will discuss the reasons behind the choice of a satellite uplink and technology considerations, as well as the prospects for a quantum satellite mission.