universität innsbruck

FWF Der Wissenschaftsfonds

Innsbruck Physics Colloquium

How to catch, and detect, a photon

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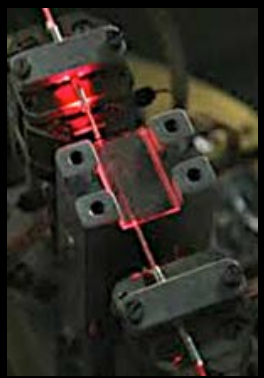
Starting with the demonstration of lasing more than 50 years ago, the special properties of rare-earth ion doped crystals and glasses have given rise to the development of numerous solid-state lasers and amplifiers, which are crucial for the functioning of today's world-wide Internet. As a fascinating generalization of their use in optical communication infrastructure, it became clear during the past decade that, when cooled to cryogenic temperatures of a few Kelvin, rare-earth crystals also promise the creation of technology for quantum communication networks.

In this talk, I will introduce and discuss our experimental work on a key ingredient of such networks: a storage device for quantum states of light based on a thulium-doped crystal cooled to around 1K. This work is interesting from a fundamental point of view, and furthermore paves the path towards a quantum repeater, which will ultimately allow quantum communications over arbitrary distances.

Colloquium: Tuesday, 10.12.2019
17:15 h in lecture hall C



DK-ALM Pre-Talk: 16:30 h
Christian Schneider
Superconducting Quantum Magnetomechanics

Snacks will be provided in between the pre-talk and the colloquium.

Innsbruck Physics Colloquium, Organisation: M. Beyer, H.-C. Nägerl, A. Reimer