SFB/TRR 21 - Seminar

1. Juli 2014, Stuttgart

Amir Feizpour
(University of Toronto, Canada)

Nonlinear optics at few-photon level in cold Rubidium atoms

Photons are excellent information carriers: they are fast and they interact very weakly with their environment. However, they also interact extremely weakly with each other. This imposes an important challenge on any task that requires photon-photon interaction. Most notably, it is a major stumbling block in realizing the dream of optical quantum information processing. For this particular task, strong interactions between few-photon quantum states are needed. I will talk about our experimental effort to use cold Rubidium atoms as the mediator of photon-photon interactions and will present our results on the observation of cross-phase modulation using post-selected single photons.

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Universität Stuttgart, NWZII, Raum 3.123
Pfaffenwaldring 57, 70569 Stuttgart

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