

KIDS TALK

“Engineering Photonic Nanostructures for Quantumoptical Experiments on a Chip”

Speaker: Alexander Landowski, AG Widera

Abstract: We are setting up an experiment to study few entangled quantum objects, such as single photons or atoms, on a photonic chip. In the first step of this project we want to observe a quantum walk of photons, i.e. a random walk with quantum mechanical objects, in waveguide networks on a chip. Our material system used for photonic waveguides allows for integrating single quantum emitters into our waveguides, which we aim at as a second step. Such emitters as, e.g., nitrogen vacancy centers not only emit single photons, but also possess an optically accessible spin. Our ultimate goal is to entangle two or more of these emitters to study entangled few body systems.

I will give a short introduction into quantum walks with photons, show necessary elements for photonic networks in simulation, their fabrication and present the actual status of our experiment. Finally an outlook on our next steps will be given.

When: Friday, July 17th 2015, **10:00 am**

Where: Room 46-387/388

All undergraduate and graduate students as well as postdocs are welcome and encouraged to join our discussion!

For questions, comments or suggestions: vollmar@rhrk.uni-kl.de

***** COFFEE, TEA AND COOKIES WILL BE SERVED *****

