



Seminar: Optics/Photonics SoSe 2016

Hot Topics in Theory and Experiment

In this seminar, we introduce and discuss modern concepts in optics and photonics. Each talk will focus on a recently published research highlight. All presentations are in English, but we allow for German as exceptions as well. The seminar is part of *the Optik-Spezialisierungsmodul P23.4.2 Optik/Photonik*.

Time and date: Thursdays 15-17 Uhr in NEW 14, 1'14.

The first meeting with introduction and distribution of the topics is Thursday, 21.04., 15:15 Uhr in NEW 14, 1'14.

Selection of possible topics :

- Entangled photons from semiconductor nanostructures for quantum information (OB)
- Loophole free test of Bell's inequalities with artificial and real atoms (OB)
- Calculating photoionization spectra of atoms and molecules using non-hermitian quantum mechanics (AS)
- Quantum simulators based on ultracold atoms in optical lattices (AS)
- Discontinuous Galerkin Methods in Nano-Photonics (KB)
- A force out of "nothing": The Casimir Effect (FI)
- Effects due to the motion through the quantum vacuum (FI)
- Hyperbolic metamaterials (SK)
- Accelerator-based sources for short wave radiation (TE)
- Generation and application of Terahertz radiation (TE)
- LIGO – The detection of gravitational waves using kilometer-scale optical interferometers (AP)
- High harmonic generation in atoms and molecules (MI)
- Time delays in ionization: how long does it take an atom to absorb a photon? (MI)
- High resolution terahertz spectroscopy with the Stratospheric Observatory for Infrared Astronomy (HWH)
- Laser induced breakdown spectroscopy for planetary research (HWH)