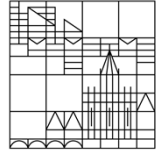


# Physikalisches Kolloquium

Universität  
Konstanz



Di 07.02.17  
15:15 Uhr  
14:45 Uhr, Kaffee/Tee  
R 513



**PD Dr. Petra Groß**  
Universität Oldenburg

## Ultrafast optical and electron nano-spectroscopy at interfaces

Recently, evidence accumulates that quantum coherences plays an important role in a multitude of processes, be it during energy transfer in natural light harvesting complexes or charge separation in artificial organic photovoltaic material. To investigate such elementary optical excitations, new spectroscopic techniques providing nanometric spatial and femtosecond time resolution are urgently needed to advance our understanding of the structure-function relation of natural and artificial nanostructures.

In this talk I will present our approach to plasmonic nanoscopy based on coupling far-field light to a point-dipole-like emitter at the apex of a sharp metallic taper. The localization of the optical excitation enables linear and nonlinear optical spectroscopy in a strongly confined, nanometric volume, as well as plasmon-assisted electron emission as a step towards ultrafast electron microscopy.

