

FAKULTÄT für PHYSIK  
LUDWIG-MAXIMILIANS-UNIVERSITÄT  
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT  
TECHNISCHE UNIVERSITÄT MÜNCHEN  
MÜNCHEN/GARCHING

## MLL-KOLLOQUIUM

Donnerstag, 02.07.2015, 16<sup>15</sup> Uhr

Seminarraum 127, TUM, Physik II, Erdgeschoss/Nord  
Treffen zum gemeinsamen Kaffee 16 Uhr

**Prof. Claus Ropers**

(Univ. Göttingen)

### **Ultrashort electron pulses from needle emitters - basic principles and first applications**

Novel methods in time-resolved electron microscopy, diffraction and spectroscopy promise unprecedented insight into the dynamics of structural, electronic and magnetic processes on the nanoscale. A key to the realization of such technologies is the generation of highly coherent ultrashort electron pulses. In this talk, I will introduce laser-induced electron emission from nanostructures and will discuss our recent progress in the application of these coherent electron sources. In particular, the development of ultrafast low-energy electron diffraction from atomically thin films and surfaces will be described, and first results from an ultrafast transmission electron microscope will be presented.

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