

Measurements of femtosecond electron life times in metallic quantum-well states

This module is supposed to give a brief insight into ultrafast measurement techniques. Using time-resolved two-colour photoemission spectroscopy, we will measure electronic life times in thin Pb films on a silicon substrate. These films exhibit confined electronic structures, which allows for a clear assignment of spectroscopic signatures and corresponding analysis of electron lifetimes in the few femtosecond range. Participants will get insight into femtosecond laser systems and non-linear optical conversion techniques as well as ultrahigh vacuum and epitaxial film preparation. A valid laser safety instruction is a prerequisite to participate. Upon request, we can provide this instruction prior to the course.