

EINLADUNG ZUM
WIENER PHYSIKALISCHEN KOLLOQUIUM

**ANGLE-RESOLVED PHOTOEMISSION,
A SPECTROSCOPY FOR MANY-BODY
PROPERTIES OF SOLIDS**

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Traditionally angle-resolved photoemission spectroscopy (ARPES) was used for the determination of the band structure of solids. During the last two decades both the energy and the angular resolution of ARPES has strongly increased. Thus it is now possible to measure deviations from the bare-particle band structure in the immediate vicinity of the Fermi level which provides momentum dependent information on the dressing of the charge carriers due to the interaction with other degrees of freedom such as phonons, magnons, excitons, and plasmons. This renormalization of the band structure is described by the complex self-energy function, the real part of which is related to the mass enhancement while the imaginary part is related to the finite lifetime of the quasi-particles or the scattering rate. In the first part I will give an introduction into ARPES and many-body properties of solids. In the second part I will review recent ARPES results on the dressing of the charge carriers in intercalated graphite (graphene), transition metals (Fe,Co,Ni), and high- T_c cuprate superconductors.

Montag, 12. Dezember 2011, 17:30 Uhr
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