FACOLTÀ DI SCIENZE MATEMATICHE, FISICHE E NATURALI
DIPARTIMENTO DI MATEMATICA E FISICA "NICCOLÒ TARTAGLIA"

Core Level and Angle Resolved Photoemission (ARPES): a many-body viewpoint

Interviene
Norman MANNELLA
Department of Physics and Astronomy, University of Tennessee, Knoxville (USA)

Abstract
Core Level Photoemission (PES) is one of the premiere techniques commonly employed for the chemical analysis of materials. In this context, it is often referred to as ESCA, Electron Spectroscopy for Chemical Analysis. Another very well known methodology is Angle Resolved Photoemission (ARPES), which can directly reveal the band structure of solids. Yet, in more sophisticated approaches, PES and ARPES are extremely powerful for the study of complex electron systems due to their ability to reveal the nature of the valence electron states, including electron correlations and renormalization effects. In essence, the initial hole created by photon absorption plays the role of a test charge introduced in the system under study, and the response of the system can take the form of different screening mechanisms discernible as characteristic spectral signatures.
This brief series of lecture will provide a pedagogical introduction to the fundamental concepts of many-body physics commonly employed for the description of complex electron systems and the interpretation of PES and ARPES experiments.

Ciclo di lezioni

24 giugno 2024, ore 14.00 - Aula 29
25 e 26 giugno 2024, ore 14.00 – Aula 21
28 giugno 2024, ore 14.00 – Aula 29
Università Cattolica del Sacro Cuore
via Garzetta 48, Brescia

Partecipa alla riunione ora

UNIVERSITÀ CATTOLICA del Sacro Cuore