

# Advanced Spectroscopy of Solids

## Interviene

Prof. Dr. FULVIO PARMIGIANI

International Faculty - University of Cologne and Department of Physics and University of Trieste (Italy)

## SCOPE OF THE LECTURES

The lectures are thought for graduate students in condensed matter. The aim is to provide a clear and possibly simple background of some advanced spectroscopies of solids suitable for observing low energy interactions in condensed matter. The lectures starts with some basic classical concepts on the matter-radiation interaction leading to the description of absorption and scattering processes then expanded to the quantum-mechanical formalism. The last sets of lectures will cover fundamental spectroscopic concepts applied to the study of some low energy magnetic interactions and elementary excitations in solids and as these interactions and excitations can be detected by X-ray Magnetic Circular Dichroism (XMCD), X-ray Magnetic Linear Dichroism (XMLD), non-linear based spectroscopies, such as Raman and Resonant Inelastic X-ray scattering (RIXS) and angle resolved photoelectron spectroscopy (ARPES).

Lectures will be accompanied by teacher's notes and bibliographic suggestions consisting of articles and textbooks to consult.

## PhD Course

**March 24th and 25th**

**April 7th, 8th, 14th, 15th**

**May 19th, 20th**

**Sala Riunioni S4, h- 15.00-17.00**

**Università Cattolica del Sacro Cuore**

**via Garzetta 48, Brescia**



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