

Bonn-Cologne Graduate School of Physics and Astronomy
**Master Course on
Advanced Spectroscopy of Quantum Materials**
Wednesdays & Fridays, October 26 - November 25, 2022, 14⁰⁰-17⁰⁰
Seminar room 0.01 - Theory Building, University of Cologne



bcgs

Lecturer:

Prof. Dr. Fulvio Parmigiani (Dipartimento di Fisica, Università degli Studi di Trieste/ Elettra-Sincrotrone Trieste)

Abstract:

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 program starts with some basic classical concepts on the matter-radiation interaction leading to the description of absorption and scattering processes and then expanded to the quantum-mechanical formalism. The lectures will cover fundamental spectroscopic concepts applied to the study of low energy magnetic interactions and elementary excitations in solids and how these interactions and excitations can be detected by X-ray Magnetic Circular Dichroism (XMCD), X-ray Magnetic Linear Dichroism (XMLD) and non-linear spectroscopies, such as Raman and Resonant Inelastic X-ray scattering (RIXS).

The lectures will be accompanied by exercises. It is foreseen that successful attendance of the exercises will be rewarded within the credit-point scheme.

No fees are required. The number of attendants will be limited to about 30. Due to organizational reasons, we require you to register. Please indicate that you need the credit points upon registration.

Please send an email until 24.10.2022 to hazel@ph2.uni-koeln.de. If you have any further question, please contact Prof. Paul H. M. van Loosdrecht via pvl@ph2.uni-koeln.de.

