

SFB 608

Einladung zum Kolloquium

- Ort:** Universität zu Köln
II. Physikalisches Institut, Seminarraum 201
- Zeit:** 25. Mai 2005, 14 Uhr c.t.
- Sprecher:** Dr. Giacomo Ghiringhelli
Dipartimento di Fisica - Politecnico di Milano – Italy
- Thema:** Electronic excitations in correlated systems
studied with L edge RIXS

The recent progress of instrumentation for x-ray emission spectroscopy has opened new opportunities in the field of resonant inelastic x-ray scattering (RIXS) in the soft x-ray range. Using the AXES spectrometer installed at the beam line ID08 of the ESRF, we have measured RIXS spectra at the $L_{2,3}$ edges of Ti, Mn, Co, Ni and Cu with unprecedented energy resolution (320 meV for Mn, 640 meV for Cu). In systems where electronic correlations are strong the RIXS spectra are extremely rich of features that can be straightforwardly assigned to charge transfer or dd excitations. Their energy ranges from zero to 5-10 eV. In the case of simple oxides (MnO, CoO, NiO, CuO) the dd excitation peaks can be well reproduced using a single ion description with crystal field. The simulation of spectra of more complex materials like manganites, cobaltates, nickelates and cuprates require more sophisticated calculations.

Gez. Prof. H. Tjeng