universität wien

Fakultät für Physik

Isotopenforschung und **Kernphysik**

E I N L A D U N G

zum

V E R A - S E M I N A R

von

Gisela Schütz

Max-Planck-Institut for Intelligent Systems
(formerly MPI for Metals Research), Stuttgart

Magnetism in the light of circular polarized x-rays

Modern synchrotron X-ray sources providing highly intense X-rays of well-defined polarization led to the development of powerful techniques to get new insights into magnetic aspects of the electronic, crystallographic and geometric structure of solids. These methods are based on the X-ray magnetic circular dichroism (XMCD) resulting from the dependence of the X-ray absorption on the magnetization relative to the photon helicity. These effects which can be larger than 50 % occur at inner-shell absorption edges and reflect the spin and orbital polarization of the empty density of state allowing a quantitative determination of local magnetic spin and orbital moments with a high sensitivity up to 0.001 Bohr magnetons.

The experimental aspects are outlined, a simple model for the origin of XMCD is presented and typical results are discussed. The unique possibility of using x-ray microscopy in combination with XMCD, which can combine lateral resolution of 15 nm and time resolution of 10 psec, is described and its potential to study magnetization dynamics in nanostructures demonstrated.

Donnerstag, 31. Mai 2012, 16:30 Uhr

**1090 Wien, Währinger Str. 17, "Kavalierstrakt",
1. Stock, Victor-Franz-Hess Hörsaal**

R. Golser W. Kutschera E.M. Wild