

## TT 53: Superconductivity: Vortex Physics

Time: Wednesday 9:30–9:45

Location: H 3005

TT 53.1 Wed 9:30 H 3005

**High-resolution dichroic imaging of magnetic flux distributions in superconductors with scanning x-ray microscopy** —

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The penetration of magnetic flux into the high-temperature superconductor YBCO has been observed using a new high-resolution technique based on x-ray magnetic circular dichroism (XMCD). Superconductors coated with thin soft magnetic layers of CoFeB are observed in a scan-

ning x-ray microscope providing cooling of the sample down to 83K under the influence of external magnetic fields. Resulting electrical currents create an inhomogeneous magnetic field distribution above the superconductor which leads to a local reorientation of the ferromagnetic layer [1]. X-ray absorption measurements with circular polarized radiation allows the analysis of the magnetic flux distribution in the superconductor via the ferromagnetic layer [2]. In this work we present first images taken at 83K with high spatial resolution in the nanoscale [3].

[1] C. Stahl et al., EPL 106, 27002 (2014).

[2] C. Stahl et al., Phys. Rev. B 90, 104515 (2014).

[3] S. Ruoff et al., Appl. Phys. Lett., (submitted).