

PHYSIKALISCHES KOLLOQUIUM

Mittwoch, 05.06.2013, um 17:15 Uhr

Ort: Reichenhainer Str. 90; Neues Hörsaalgebäude, Raum: 2/N013



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Magnetic X-ray microscopy - From nanoscale behavior to mesoscale phenomena

Over the last decade magnetism research focused on a fundamental understanding and controlling spins on a nanoscale. Recently, it has been recognized, that the next step beyond the nanoscale will be governed by mesoscale phenomena, since those are supposed to add complexity and functionality, which are essential parameters to meet future challenges in terms of speed, size and energy efficiency of spin driven devices.

Magnetic soft X-ray microscopy is a unique analytical technique combining X-ray magnetic circular dichroism (X-MCD) as element specific magnetic contrast mechanism with high spatial and temporal resolution. Utilizing the inherent time structure of current synchrotron sources fast magnetization dynamics in ferromagnetic elements can be performed with a stroboscopic pump-probe scheme with 70ps time resolution. At next generation light sources fsec spin dynamics can be addressed.

In this talk I will review recent studies of magnetic vortex structures, where we found a stochastic character in the nucleation process, which can be described within a symmetry breaking DM interaction. I will also present time resolved studies of dipolar coupled magnetic vortices, where we found an efficient energy transfer mechanism, which can be used for novel magnetic logic elements.

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Alle Zuhörer sind ab 17:00 Uhr zum Kaffee vor dem Hörsaal eingeladen.