

X-Ray Magnetic Linear Dichroism and T-MOKE in Reflection of crystalline Fe at the 3p Edges – Theory and Experiment

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We present combined first-principle calculations and experimental results of X-ray magnetic linear dichroism (XMLD-R) and T-MOKE in reflection for crystalline Fe thin films across the 3p edges using linearly polarized synchrotron radiation. We show that XMLD is a perfect technique to detect magneto-crystalline anisotropy since it is a quadratic effect in magnetization. In contrast T-MOKE which is linear in the magnetization depends weakly on the orientation of the crystalline axes with respect to the electric and magnetic fields.[1]

References:

[1] M. F. Tesch, D. Legut et. al, Phys. Rev. B **89**, 140404(R) (2014).