Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Ab-initio theory of Kerr angles in magnetic multilayer systems
IRENE REICHL, ANDRAS VERNES, PETER WEINBERGER, CMS, TU Vienna, Austria — Ab-initio magneto-optic Kerr rotation and ellipticity angles are presented for the system $Cu_4/Ni_8/Cu_n/Ni_9/Cu(100)$ and for $Fe_n/Au(100)$ in the vicinity of the reorientation transition, with n varying between 2 and 10. For the Cu/Ni system it will be shown that the occurring oscillations in the Kerr angles with respect to the spacer thickness resemble closely those for the experimentally recorded interlayer exchange coupling energy. In the case of Fe/Au a very accurate description of the magneto-optical properties can be given as the preferred magnetization turns from perpendicular to in-plane. The obtained theoretical results are in very good agreement with available experimental data.

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Date submitted: 11 Oct 2004 Electronic form version 1.4