Abstract Submitted
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Scaling behavior of the exchange-bias training effect[1] SRINIVAS POLISETTY, SARBESWAR SAHOO, CHRISTIAN BINEK, University of Nebraska-Lincoln — The dependence of the exchange-bias training effect on temperature and ferromagnetic film thickness is studied in detail and scaling behavior of the data is presented.[†] Thickness-dependent exchange bias and its training are measured using the magneto-optical Kerr effect. A focused laser beam is scanned across a Co wedge probing local hysteresis loops of the Co film which is pinned by an antiferromagnetic CoO layer of uniform thickness. A phenomenological theory is best fitted to the exchange-bias training data resembling the evolution of the exchange-bias field on subsequently cycled hysteresis loops. Best fits are done for various temperatures and Co thicknesses. Data collapse on respective master curves is achieved for the thickness and temperature-dependent fitting parameters as well as the exchange bias and coercive fields of the initial hysteresis loops. The scaling behavior is strong evidence for the validity and the universality of the underlying theoretical approach based on triggered relaxation of the pinning layer towards quasi-equilibrium. [†]Srinivas Polisetty, Sarbeswar Sahoo, Christian Binek, Phys. Rev. B **76**, 184423 (2007).

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