## Abstract Submitted for the TSF09 Meeting of The American Physical Society

Origins and Properties of Uncompensated Magnetization in FeF<sub>2</sub> KARIE BADGLEY, Department of Physics, Texas A&M University, MIKHAIL ZHERNENKOV, MICHAEL R. FITZSIMMONS, LANSCE, Los Alamos National Laboratory, IGOR V. ROSHCHIN, Department of Physics, Texas A&M University — Recent studies<sup>1</sup> of exchange bias demonstrated uncompensated magnetization in an antiferromagnet. To further investigate the properties and the origin of this magnetization, two types of 36nm thick samples of FeF<sub>2</sub> on MgF<sub>2</sub> were prepared: with and without a 3nm top layer of Al used to prevent possible oxidation. SQUID VSM measurements on these samples showed uncompensated magnetization. Samples coated with Al were found to have larger magnetic susceptibility. These findings are in agreement with neutron scattering measurements, which also showed the uncompensated magnetization primarily at the top surface of FeF<sub>2</sub> for the Al-coated sample. The temperature dependence and possible origin of the uncompensated magnetization will be discussed. Funded by Texas A&M University and Texas A&M University – CONACyT Collaborative Research Grant Program.

<sup>1</sup>M.R. Fitzsimmons et al. Phys. Rev. B **75**, 214412 (2007).

Karie Badgley Department of Physics, Texas A&M University

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