

Abstract Submitted
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In-Plane Magnetic Structure of Exchange Biased Co/FeF₂¹ X. LU, Physics Dept., Univ. of California San Diego, S. ROY, Advanced Light Source, Lawrence Berkeley National Lab, E. BLACKBURN, School of Physics and Astronomy, Univ. of Birmingham, UK, MIKHAIL EREKHINSKY, IVAN K. SCHULLER, Physics Dept., Univ. of California San Diego, J.B. KORTRIGHT, Advanced Light Source, Lawrence Berkeley National Lab, S.K. SINHA, Physics Dept., Univ. of California San Diego — We report on measurements of magnetic X-Ray specular and diffuse scattering on an exchange biased Co/FeF₂ bilayer. The data has been analyzed using the full theory of resonant x-ray scattering in the distorted wave born approximation, and various structural and magnetic roughness parameters have been extracted. We find that the length associated with magnetic corrections in the anti-ferromagnet increases as the temperature decreases, but remains unchanged for the ferromagnet. The diffuse scattering together with the specular reflectivity provide a more complete picture of the magnetic interfacial phenomena that give rise to exchange bias.

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