Abstract Submitted
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Quantitative X-Ray Magnetic Microscopy: from parallel stripe domains to buried topological defects[1] MARIA VELEZ , C. BLANCO-ROLDAN, C. QUIROS, F. VALDES-BANGO, L. M. ALVAREZ-PRADO, J. I. MARTIN, J. M. ALAMEDA, Universidad de Oviedo-CINN, SPAIN, A. HIERRO-RODRIGUEZ, U. Porto, Portugal, M. DUCH, N. TORRAS, J. ESTEVE, IMB - CNM, CSIC, SPAIN, A. SORRENTINO, R. VALCARCEL, E. PEREIRO, S. FERRER, Alba Synchrotron, SPAIN — Magnetic transmission X-ray microscopy (TXM) is a powerful imaging technique that can produce element specific images of magnetic domains with nanometric lateral resolution. Here we present a novel imaging method in which the angular dependence of the magnetic contrast in a series of high resolution TXM images is used to obtain quantitative descriptions of the magnetization (canting angles and sense). This has been applied first to analyze parallel stripe domains in weak perpendicular anisotropy ferromagnetic NdCo5 layers of different thickness, and in NdCo5/Permalloy bilayers. Then, our method has been used to identify complex topological defects (merons or 1/2 skyrmions) in a NdCo5 film that are only partially replicated by the Permalloy overlayer [1]. Meron propagation in trilayers (across the thickness) and in hexagonal networks (across bifurcations) will be discussed in terms of their topological characteristics (chirality and polarity). [1] C. Blanco-Roldan et al. Nature Communications 6 (2015) 8196

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