

Abstract Submitted  
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**Magnetic Domain Morphology in multi-layered [4 Å Co/ 7 Å Pt] thin film**<sup>1</sup> JEREMY METZNER, Univ of New Mexico — A [Co (4 Å) /Pt(7 Å)]<sub>50</sub> thin film was studied to determine the morphological behavior of the magnetic domains as a function of the magnetic history. This thin film exhibits perpendicular magnetic anisotropy allowing for magnetic imaging using an MFM. A remanent study was performed to find the maximum domain density by analyzing the number of domains as a function of the previously applied magnetic field. These results were compared to those of a descending magnitude magnetic series. From these results a study was performed to determine if the domain density could be further increased. This was done by reapplying the optimal field to enhance the maximum domain density. An in-situ magnetic field was also used to determine the evolution of the magnetic morphology along a few magnetic loops that were applied. Domain periodicity was studied taking a 2-D Fourier transform of the domains pattern. Domain period was determined as a function of the previously applied field. The results of this study were compiled to give a comprehensive understanding of this thin film. Domain density was compared to that of an ascending magnitude magnetic series to determine a biased behavior given by the direction of the applied magnetic series.

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