Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Momentum transfer resolved memory in a magnetic system with perpendicular anisotropy KEOKI SEU, SUJOY ROY, Advanced Light Source, Lawrence Berkeley National Laboratory, RUN SU, DAN PARKS, Physics Department, University of Oregon, ERIK SHIPTON, ERIC FULLERTON, Physics Department, University of California at San Diego, STEPHEN KEVAN, Physics Department, University of Oregon — We have used resonant, coherent soft x-ray scattering to measure wave vector resolved magnetic domain memory in Co/Pd multilayers. The technique uses angular cross correlation functions and can be applied to any system with circular annuli of constant values of scattering wave vector **q**. In our Co/Pd film, the memory exhibits a maximum at **q**=0.0384 nm^{-1} near initial reversal that decreases in magnitude as the magnetization is further reversed. The peak is attributed to bubble domains that nucleate reproducibly near initial reversal and which grow into a labyrinth domain structure that is not reproduced from one magnetization cycle to the next.

Keoki Seu
Advanced Light Source, Lawrence Berkeley National Laboratory

Date submitted: 09 Nov 2011 Electronic form version 1.4