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Mapping Magnetic Memory in [Co/Pd]IrMn Thin Films Under Field Cooling Conditions ALEX SAFSTEN, KARINE CHESNEL, Brigham Young University, ERIC FULLERTON, University of California San Diego — Certain magnetic thin films exhibit the property of magnetic memory when they meet some specific requirements. Magnetic memory is the ability of the magnetic domains within the film to return to a previous configuration after the film has been magnetically saturated. We found that such films, which present exchange bias properties, show a very high amount of magnetic memory when cooled below their blocking temperature. We have further investigated the effect of cooling conditions on the amount of memory and its behavior throughout the magnetization cycle. I will present the methods we are using to map the magnetic memory throughout the magnetic hysteresis cycle, via magnetic speckle cross-correlations. I will also present results from various experiment and recent synchrotron experiment carried out at APS in July 2014, confirming the occurrence of magnetic memory in [Co/Pd] IrMn exchange bias thin multilayers.

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