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**The effect of x-ray illumination on magnetic domain memory in [Co/Pd] / IrMn multilayers** COLBY WALKER, Brigham Young University, MASON PARKES, Auburn University, CALEB OLSSON, Brigham Young University, DAVID KEAVNEY, Advanced Photon Source, ERIC FULLERTON, Center for Memory and Recording research, KARINE CHESNEL, Brigham Young University — We are studying the effect that illumination by coherent resonant x-rays may have on magnetic domain memory (MDM) in a [Co / Pd] / IrMn multilayers [1-3]. MDM is the ability of the magnetic domains to retain their exact same domain topology upon field cycling. Earlier studies have suggested that under higher dose of x-ray illumination, the material may lose its existing MDM. To investigate this potential effect, we have used both x-ray resonant magnetic scattering (XRMS) along with magneto-transport measurements [4,5] to track the exchange bias while the sample is illuminated with x-rays. Magneto-transport is here used to measure the hysteresis loop of our multilayers material from which we can measure the exchange bias. A loss of exchange bias would indicate that the x-rays illumination dose may alter the strength of the exchange couplings and ultimately the amount of MDM. Knowing if a loss of exchange bias has occurred requires collecting magneto-transport data as well as XRMS data and correlating the observed changes under various dose of x-ray illumination.

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