

Abstract Submitted  
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**Planar Hall effect (PHE), anisotropy magnetoresistance (AMR), and anomalous Hall effect (AHE) in perpendicularly magnetized synthetic ferromagnets** SEE-HUN YANG, IBM Almaden Research Center, PRISCILA BARBA, AURELIEN MANCHON, KAUST, STUART PARKIN, IBM Almaden Research Center — Chiral spin torque driven domain wall motion (CIDWM) faster than 300 m/s along the current direction has been reported in perpendicularly magnetized atomically thin Co/Ni bilayers deposited on Pt underlayers [1], making these materials promising for DW-based memory and logic devices. Moreover, most recently even more efficiently domain motion ( $\sim 750$  m/s) by current has been observed from synthetic antiferromagnetic(SAF) racetracks with almost compensated magnetization [2]. In this talk we will present Hall measurement results from SAF Hall bars that exhibit characteristic planar Hall effect and anomalous Hall effect. We discuss the origin of these behaviors.

[1] Kwang-su Ryu, Luc Thomas, See-Hun Yang, S.S.P. Parkin, Nature Nanotechnology 8, 527 (2013).

[2] See-Hun Yang, Kwang-su Ryu, S.S.P. Parkin, accepted in Nature Nanotechnology.

See-Hun Yang  
IBM Almaden Research Center

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