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Switching symmetry of in-plane current induced spin orbit effects in β-W/Ta/CoFeB/MgO/Ta multilayers[1] AVYAYA JAYANTHI NARASIMHAM, State University of New York at Albany, MENG ZHU, VINCENT LABELLA , SUNY Polytechnic Institute , Albany — Spin-orbit coupling in metastable β-W generates spin-orbit torques (SOT) strong enough to flip the magnetic moment of an adjacent magnetic layer. In a magnetic tunnel junction (MTJ) stack these torques can be used to switch between high and low resistive states. Inserting a 1 nm Ta insert-layer between the CoFeB and W induces PMA in these layers. β-W(5)/Ta(1) channel and the adjacent CoFeB/MgO/Ta layers are patterned into Hall bar and Hall cross structures. The effect of orthogonality between current and the external magnetic field will be presented. A comparison between switching symmetries of current sweeps under constant external magnetic field Vs magnetic field sweeps under constant current will be discussed.

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