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Spin-orbit torque induced reversible coercivity change in Co/Pd multilayer thin films. SANDEEP KUMAR, Univ of California - Riverside — In this work we report reversible reduction in coercivity of Co/Pd multilayer thin films under high-density direct current biasing. We carried out in-situ focused magneto optic Kerr effect based hysteresis measurement while the specimen was under DC bias. The experiments show a reversible reduction in coercivity during the application of direct current. We propose this reduction occurs due to the spin-orbit torques (Rashba) generated at high current densities. Using an in-situ transmission electron microscope biasing experiment, we also showed the presence of dissymmetric lattice structure of Co/Pd multilayers. Our results suggest that the Rashba torque is the dominant spin-orbit torque since coercivity change is a bulk phenomenon as compared to spin Hall effect.

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