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Effects of transverse fields on spin-valve sensor magnetic field measurements ALEX JEFFERS, University of Maryland, ANTONIO OROZCO, Neocera, Beltsville, MD, ALFRED CAWTHORNE, Trevecca Nazarene University, Nashville, TN, CHRISTOPHER ROWLETT, STEVE GARRAHAN, Neocera, Beltsville, MD, FREDERICK WELLSTOOD, University of Maryland, College Park, MD — Spin-valve sensors have become a popular magnetic sensor, used in many applications such as magnetic imaging or hard drive heads. Spin-valves are designed to measure only one component of the magnetic field. This component is determined by the composition of the spin-valve layers, the manufacturing conditions, shape anisotropy, and other design decisions. We took magnetic images of L-shaped samples in order to determine if magnetic fields transverse to the direction of measurement affect spin-valve sensors. Specifically, we used a 2 m by 4 m Cu-Mn-Ir spin-valve sensor to take image of chips with "L-shaped" currents. We find that transverse fields can significantly affect the measurement direction of spin-valve sensors.

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