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**Bias and Angular Dependence of Spin-Transfer Torque in Magnetic Tunnel Junctions** C. WANG, Y.-T. CUI, R.A. BUHRMAN, D.C. RALPH, Cornell University, J.Z. SUN, IBM T. J. Watson Research Center — We report measurements of the spin-transfer torque vector $\tau$ in MgO-based magnetic tunnel junctions (MTJs) by means of the spin-transfer-driven ferromagnetic resonance (ST-FMR) technique. We point out that for large applied DC biases, $I$, across the MTJ, for best accuracy one should correct for an artifact that arises because an applied microwave current changes the DC resistance of a MTJ slightly, which results in an extra DC voltage signal in the presence of a current bias. The correction depends strongly on the initial offset angle between the magnetizations of the two electrodes in the MTJ, and it can explain the very different results for the bias dependence of $\tau$ initially reported by two groups. After the correction is applied, we measure consistent values of $\tau$ ($I$) over a wide range of offset angles and achieve sufficiently-improved precision to distinguish among competing theoretical predictions. We determine that the in-plane component of $d\tau/dV$ for the MTJs we study has a weak but non-zero dependence on bias.

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