

MAR10-2009-000739

Abstract for an Invited Paper
for the MAR10 Meeting of
the American Physical Society

A Three terminal spin-torque driven magnetic switch¹

JONATHAN SUN, IBM T. J. Watson Research Center

A three-terminal spin-torque-driven magnetic switch is experimentally demonstrated. The device uses non-local spin-current and spin-accumulation as the main mechanism for current-driven magnetic switching. It separates the current-induced write operation from that of a magnetic tunnel junction based read. The write current only passes through metallic structures, improving device reliability. The device structure makes efficient use of lithography capabilities, important for robust process integration. I will give a review of the basic device structure and its characteristic transport properties.

¹IBM-MagIC MRAM Alliance, IBM T. J. Watson Research Center, 1101 Kitchawan Road, Yorktown Heights, NY 10598