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Magnetic field dependence of spin torque switching in nanoscale magnetic tunnel junctions LIU YANG, GRAHAM ROWLANDS, Department of Physics and Astronomy, University of California, Irvine, CA, JORDAN KATINE, Hitachi Global Storage Technologies, San Jose, CA 95135, JUERGEN LANGER, Singulus Technologies AG, 63796 Kahl/Main, Germany, ILYA KRIVOROTOV, Department of Physics and Astronomy, University of California, Irvine, CA —
Magnetic random access memory based on spin transfer torque effect in nanoscale magnetic tunnel junctions (STT-RAM) is emerging as a promising candidate for embedded and stand-alone computer memory. An important performance parameter of STT-RAM is stability of its free magnetic layer against thermal fluctuations. Measurements of the free layer switching probability as a function of sub-critical voltage at zero effective magnetic field (read disturb rate or RDR measurements) have been proposed as a method for quantitative evaluation of the free layer thermal stability at zero voltage. In this presentation, we report RDR measurement as a function of external magnetic field, which provide a test of the RDR method self-consistency and reliability.

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