Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Assisted Writing in Spin Transfer Torque Magnetic Tunnel Junctions[1] SAMIRAN GANGULY, ZEESHAN AHMED, SUPRIYO DATTA, School of Electrical and Computer Engineering, Purdue University, ERNESTO E. MARINERO, School of Materials Engineering, Purdue University — Spin transfer torque driven MRAM devices are now in an advanced state of development, and the importance of reducing the current requirement for writing information is well recognized. Different approaches to assist the writing process have been proposed such as spin orbit torque, spin Hall effect, voltage controlled magnetic anisotropy and thermal excitation. In this work,we report on our comparative study using the Spin-Circuit Approach regarding the total energy, the switching speed and energy-delay products for different assisted writing approaches in STT-MTJ devices using PMA magnets.

[1]This work was supported in part by C-SPIN, one of six centers of STARnet, a Semiconductor Research Corporation program, sponsored by MARCO and DARPA and in part by the National Science Foundation through the NCN-NEEDS program, contract 1227020-EEC.

Ernesto Marinero
Purdue University

Date submitted: 14 Nov 2014 Electronic form version 1.4