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Effect of Lower Demagnetizing Field on Switching Currents of Magnetic Nanopillars[1] HUSEYIN KURT, REZA LOLOEE, WILLIAM PRATT JR., JACK BASS, Physics Department and Center for Sensor Materials, Michigan State University, East Lansing, MI 48824 — **Katine et al.[1] derive an expression of the form Is $\propto$ [Heff+2πM] (where 2π times the magnetization M comes from the demagnetizing field for the switching layer) for the switching current in a ferromagnetic/non-magnetic/ferromagnetic (F/N/F) nanopillar. If this equation correctly describes Is, then reducing the demagnetizing field should apparently reduce Is. The interfacial interaction between Co and Au favors a perpendicular orientation of M. Sandwiching a thin switching Co layer between two Au layers should, thus, reduce its demagnetizating field. To look for this effect we made nanopillars of Co/Au/Co(t)/Au with Co thickness t = 1, 2, 3 and 4 nm, and measured magnetoresistances and switching currents. We will compare the switching currents of these nanopillars with those for Co/Cu/Co/Cu nanopillars. [1] J.A, Katine et. al., Phys.Rev. Lett. 84, 3149 (2000).**

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Jack Bass
Physics Department and Center for Sensor Materials, Michigan State University, East Lansing, MI 48824

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