

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**Noise Measurement in Magnetic Tunnel Junctions** FENG GUO, DAN DAHLBERG, University of Minnesota , UNIVERSITY OF MINNESOTA TEAM — An investigation has been carried out on the low frequency noise in magnetic tunnel junctions in various magnetic states. The noise measurements show similar  $1/f$  spectra in either the parallel or antiparallel magnetic state. The transition region of applied magnetic field, switching from parallel to antiparallel and vice versa, indicates a  $1/f^2$  spectrum along with an increase in the low frequency noise. This  $1/f^2$  spectrum and noise increase is found to be an artifact resulting from the magnetic after effect which occurs in the magnetic switching regions. Removing the effects of the magnetic after effect, only  $1/f$  spectra are measured. The shot noise at higher frequency where the  $1/f$  noise is negligible is also found in the tunnel junctions. Though it appears to be linear with the applied current, the shot noise observed can be largely enhanced.

Feng Guo  
University of Minnesota

Date submitted: 10 Dec 2009

Electronic form version 1.4