

Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Magnetic Shielding Studies for Electric Dipole Moment Experiments HARVEY GOULD, B. FEINBERG, LBNL — Electric dipole moment experiments are necessarily sensitive to magnetic fields and hence require effective magnetic shielding. In testing the shielding factor of single-layer Permalloy (Carpenter HyMu“80” ®) cylinders, we find time-dependent effects lasting tens of minutes to thousands of minutes when a static magnetic field is applied to a Permalloy cylinder that has been demagnetized in a region of near-zero field. A decrease in the magnetic field, measured at the center of the cylinder, of about 20 percent is observed for applied fields ranging from 0.5 A/m to 16 A/m. The latter applied field is comparable to the Earth’s magnetic field. Effects that resemble these have been seen in other ferromagnetic materials.

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Date submitted: 17 Jun 2014

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