

Notre Dame **Science**  
Department of Physics

# EXPERIMENTS WITH PICOSECOND ACOUSTIC PULSES IN FERROMAGNETIC (Ga,Mn)As

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4:00 p.m. NSH 184

We study the effect of ultrashort strain pulses on magnetization of ferromagnetic (Ga,Mn)As epitaxial layers. The strain pulse injected into the structure modulates the magneto-crystalline anisotropy of the ferromagnetic layer, and tilts the magnetization out of its equilibrium orientation. The tilt and the resulting coherent precession of magnetization that follows are monitored by time-resolved Kerr rotation measurements. Numerical analysis based on a model that suggests a linear dependence of magnetic anisotropy coefficients on strain is in good agreement with experimental results. The experiment also manifests interesting side effects, such as excitation of spin waves and specific features of optical detection of magnetization kinetics.

Condensed  
Matter  
Seminar

All interested  
persons are  
cordially  
invited to  
attend.