

Nanotechnology studies of magnetic vortex physics

Mark Freeman
Department of Physics
University of Alberta and,
National Institute for Nanotechnology
Edmonton, Alberta

DATE: Thursday, April 26, 2012

TIME: 3:30 pm

PLACE: C2045

ABSTRACT: As experimental techniques increase the detail in which nanomagnetic systems can be examined, new regimes of magnetic behaviour become subject to intense scrutiny. Nanomechanical torque magnetometry, a convenient approach easily adapted to a broad range of temperatures and applied magnetic fields, is emerging to have enough sensitivity for detailed magnetization measurements of single geometrically-constrained ferromagnetic structures. These measurements reveal features only visible in observations of individual elements, such as thermally-activated magnetization telegraph noise. This becomes a useful tool in the development of a complete quantitative picture of the energy landscape of micro- or nano-magnetic elements. Technological demands for magnetic devices necessitate an improved understanding of pinning mechanisms of the magnetic textures. Some progress towards controlling the magnetic disorder in individual elements will also be reported.

ALL ARE WELCOME!!!