

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Magnetic field driven magnetic domain motion on high anisotropy UMn_2Ge_2 ¹ XINZHOU TAN, ALEX DE LOZANNE, University of Texas at Austin, MORGANN BERG, Sandia National Laboratory, RYAN E. BAUMBACH, ERIC D. BAUER, JOE D. THOMPSON, FILIP RONNING, Los Alamos National Laboratory — The ternary intermetallic UMn_2Ge_2 ferromagnet has a tetragonal crystal structure of type $ThCr_2Si_2$. It has been long reported that local U and Mn moments in UMn_2Ge_2 order on their respective sublattices at temperatures near 100 and 380 K. A more recent report also showed this compound exhibits huge uniaxial magnetocrystalline anisotropy in a pulsed experiment with magnetic fields up to 62 T. Our previous results obtained using magnetic force microscopy (MFM) indeed confirmed that UMn_2Ge_2 displays uniaxial anisotropy. We observed that branching magnetic domains on surface of the sample form flower-like patterns and stay unchanged from 77 K up to room temperature in zero magnetic field. We are currently investigating field-driven motions of the surface magnetic domains of UMn_2Ge_2 under magnetic fields up to 8 T at various temperatures.

¹Supported by NSF grant DMR-1507874

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Date submitted: 11 Nov 2016

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