Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Magnetic Second Harmonic Generation Imaging CARINA BELVIN, Department of Physics, Wellesley College, CHANGMIN LEE, Department of Physics, MIT, FERHAT KATMIS, Francis Bitter Magnet Lab and Department of Physics, MIT, PABLO JARILLO-HERRERO, Department of Physics, MIT, JAGADEESH S. MOODERA, Francis Bitter Magnet Lab and Department of Physics, MIT, NUH GEDIK, Department of Physics, MIT — Second harmonic generation is an effective probe of lattice, electronic, and magnetic symmetries of crystals where inversion symmetry is broken. In particular, magnetic second harmonic generation (MSHG) can be used to measure the magnetism induced at surfaces and interfaces of centrosymmetric materials. Imaging this MSHG signal can provide spatial information about the magnetic domains and domain boundaries that form at these interfaces. We have constructed an MSHG imaging setup using a femtosecond Ti:sapphire laser system and a highly sensitive CCD camera. Our setup can potentially be used to investigate magnetic domains and domain wall boundaries in magnetic topological insulator systems, such as EuS/Bi_2Se_3 heterostructures.

Carina Belvin
Department of Physics, Wellesley College

Date submitted: 06 Nov 2015 Electronic form version 1.4