Abstract Submitted
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Measurement of optical rotation in the magnetic topological insulator (Bi,Sb)2Te3 SHREYAS PATANKAR, University of California, Berkeley, DANIEL GOLUBCHIK, Lawrence Berkeley National Lab, JOSEPH ORENSTEIN, University of California, Berkeley, ELI FOX, DAVID GOLDHABER-GORDON, Stanford University, XIAO FENG, KE HE, YAYU WANG, QI-KUN XUE, Tsinghua University — Topological insulators with surface states that break time reversal symmetry have been predicted to have exotic topological quantum properties. One way of realizing these is through topological insulators that also have magnetic ordering. Recently, measurements of quantum anomalous hall effect were reported in thin films of chromium doped (Bi,Sb)2Te3, which gave evidence for the presence of spontaneous magnetic order in this topological insulator. We report measurements of magneto-optic Kerr effect in this material, which provides an alternative quantification of magnetization. Kerr rotation was measured as a function of applied magnetic field and of temperature. Preliminary data suggests a transition to a ferromagnetic state at 12K and a coercive field of 30mT.

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