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The field dependence of quantized Landau levels on Bi_2Te_{3+d} via scanning tunneling spectroscopy DANIEL WALKUP, YOSHINORI OKADA, WENWEN ZHOU, CHETAN DHITAL, STEPHEN WILSON, VIDYA MADHAVAN, Boston College — Measurements of Landau level (LL) spectra by scanning tunneling spectroscopy can provide important information on quasi-particle lifetime, effective g-factor as well as the dispersion of surface state bands. We have studied the effect of magnetic fields on spatially inhomogeneous samples of the topological insulator Bi_2Te_{3+d}. Using spatial maps of Landau levels as a function of magnetic field, we show that the surface state electrons near the Dirac point are surprisingly sensitive to perturbations. The magnetic field dependence also allows us to obtain an upper limit to the effective g-factor for the surface state electrons.

Daniel Walkup
Boston College

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