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Topological surface state dispersion measured using THz magneto-ellipsometry JASON N. HANCOCK, J.L.M. VAN MECHELEN, ALEXEY KUZMENKO, DIRK VAN DER MAREL, University of Geneva, CHRISTOPHE BRUNE, ELENA NOVIK, GEORGY ASTAKHOV, HARTMUT BUHMANN, LAURENS MOLENKAMP, Universitat Wurzburg — We present a magneto-optical study of the three-dimensional topological insulator, strained HgTe. Using polarization-sensitive time-domain THz spectroscopy in a magnetic field, reliable information on the Drude weight and cyclotron resonance frequency severely constrain the details of surface state dispersion within 1meV of the Fermi level. Details of the technique and its prospect for future observation of axion electrodynamics using THz spectroscopy will also be discussed.

[X] Prefer Oral Session
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