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Broadband spectroscopic characterization of topological crystalline insulator $Pb_{0.77}Sn_{0.23}Se$ ANJAN REIJNDERS, JASON HAMILTON, University of Toronto, QUINN D. GIBSON, ROBERT J. CAVA, Princeton University, KENNETH S. BURCH, Boston College — Topological crystalline insulators (TCI) are novel materials in which mirror symmetry protects the presence of spin polarized surface states. In this talk I will present the temperature dependent optical properties of $Pb_{0.77}Sn_{0.23}Se$, a compound with a temperature dependent trivial to nontrivial topological phase transition. Reflectance and ellipsometry data between 6 meV - 5.95 eV will be discussed in conjunction with optical conductivity and the frequency dependent scattering rate, revealing hints of the topological phase transition.

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