## Abstract Submitted for the CAL12 Meeting of The American Physical Society

High resolution ARPES spectroscopy on topological insualtors AHRAM KIM, Physics Department, San Jose State University, San Jose, CA, 95112; Physics Department, University of California, Santa Cruz, CA, 95064, JIAN-QIAO MENG, Physics Department, University of California, Santa Cruz, CA, 95064, GENDA GU, Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, Upton, New York 11973, GEY-HONG GWEON, Physics Department, University of California, Santa Cruz, CA, 95064 — We report new angle resolved photoelectron ARPES spectroscopy (ARPES) results on topological insulators, Bi2Se3 and Bi2Te3. Our data are characterized by unprecedentedly small Dirac point binding energy and the near absence of bulk conduction band near the Fermi energy, therefore, implying that our samples are closer to the ideal topological state than previously known samples. We also discuss the self energy extracted from the ARPES data and the line shapes, and compare them with those known for strongly correlated electron materials such as high temperature superconductors, with emphasis on high temperature. While our results agree with previous results known for topological insulators, in that they signify very weakly correlated and conventional electronic structure, thereby proving a nice reference case, we also point out some intriguing feature in the data.

> Ahram Kim SJSU, UCSC

Date submitted: 28 Sep 2012

Electronic form version 1.4