Abstract Submitted for the MAR13 Meeting of The American Physical Society

Electronic Structure Study on a 3D Dirac Semimetal Candidate Y.L. CHEN, Oxford University, Z.K. LIU, Stanford University, B. ZHOU, S.K. MO, Larence Berkeley National Lab, D. PRABHAKARAN, Oxford University, Z.J. WANG, Z. FANG, X. DAI, Institute of Physics, Chinese Academy of Sciences, Z.X. SHEN, Stanford University, Z. HUSSAIN, Larence Berkeley National Lab — A family of 3D Dirac semimetals candidates (A3Bi, A=alkali metal, B=As, Sb, or Bi) have recently been predicted to exist at the phase transition between a topological and a normal insulator when inversion symmetry is preserved. In such a semimetal, the conduction and valence bands touch only at Dirac points around which the dispersion is linear in all directions, leading to distinct physical properties, such as giant diamagnetism and linear quantum magneto-resistance. We used angle resolved photoemission spectroscopy (ARPES) to study a 3D Dirac semimetal candidate, Na3Bi and revealed interesting electronic structures. We will discuss our observation, its possible topological origin and the connection to recent theory investigation.

> Yulin Chen Oxford University

Date submitted: 04 Jan 2013

Electronic form version 1.4