

Abstract Submitted  
for the MAR10 Meeting of  
The American Physical Society

**The Electronic Structure of the Nickel Pnictide Superconductor**

**BaNi<sub>2</sub>As<sub>2</sub>** R. G. MOORE, D. H. LU, SLAC National Accelerator Laboratory, Menlo Park, CA 94025, F. RONNING, E. D. BAUER, Los Alamos National Laboratory, Los Alamos, NM 87545, S. -K. MO, M. HASHIMOTO, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, F. SCHMITT, J. SCHWEDE, Z. -X. SHEN, Stanford Institute of Materials and Energy Sciences and Department of Applied Physics, Stanford University, Stanford, CA 94305 — The electronic structure of the nickel pnictide superconductor BaNi<sub>2</sub>As<sub>2</sub> is investigated with angle-resolved photoemission spectroscopy. While the iron pnictide superconductors display unconventional superconducting properties, superconductivity in the non-magnetic nickel compounds is believed to be more conventional. Here we present the electronic structure of BaNi<sub>2</sub>As<sub>2</sub> and compare it to the iron pnictide superconductors. While differences in the electronic structures exist, similarities raise questions about the nature of the nickel pnictide superconductivity. Low energy electron diffraction also reveals distinct differences in the surface structure of nickel and iron compounds. Temperature dependence across the  $T_c = 140\text{K}$  structural phase transition is also investigated.

Robert Moore  
SLAC National Accelerator Laboratory

Date submitted: 20 Nov 2009

Electronic form version 1.4