Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Core Level and Valence Band Studies of the Novel Iron Pnictide Superconductors DANIEL GARCIA, University of California, Berkeley, CHRIS JOZWIAK, CHOONKYU HWANG, ALEXEI FEDOROV, STEPHEN HANRAHAN, STEVEN WILSON, COSTEL ROTUNDU, BYRON FREELON, ROBERT BIRGENEAU, EDITH BOURRET-COURCHESNE, ALESSANDRA LANZARA — Towards understanding the physics of the superconducting iron pnictides, critical information can be gained through exploring the electronic structure of these novel materials. We have used photoemission spectroscopy to study the $LaFeAsO_{1-x}F_x$ and the $PrFeAsO_{1-x}F_x$ superconductor. The evolution of valence band density of states, hybridization energy, Fermi surface topology and many body interaction are presented as a function of doping, photon energy and temperature. We explore the significance of these results to the question of electron correlation and spin physics in these Fe-based superconductors.

Daniel Garcia
University of California, Berkeley

Date submitted: 21 Nov 2008 Electronic form version 1.4