

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Understanding the role of disorder in Fe-arsenide superconductors** JAMES ANALYTIS, University of California Berkeley, HSUEH-HUI KUO, Stanford University, IAN FISHER, Stanford Univeristy — Disorder has a profound affect on iron-pnictide superconductors, changing the transport anisotropy, the magneto-elastic coupling, and the properties of the superconductivity itself. In the 122 structural motifs, the parent compounds have a folded band structure with compensated hole and electron pockets. Some of these pockets are thought to be protected from disorder by the topological properties of the band structure. However, the influence of disorder on each pocket is in general very difficult to reveal because transport properties will in general measure an average of all Fermi surfaces, and other Fermi surface probes (such as ARPES) will not be sensitive to subtle changes in the dynamical properties of each Fermi surface. We present results of detailed quantum oscillation studies which aim to understand how the dynamics of each Fermi surface pocket is affected by disorder.

James Analytis  
University of California Berkeley

Date submitted: 19 Nov 2012

Electronic form version 1.4