Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Electronic inhomogeneity in heavy Fermions[1] ZACHARY FISK, Department of Physics and Astromony, University of California, Irvine, Irvine, CA 92697, ERIC BAUER, YI-FENG YANG, Los Alamos National Laboratory, Los Alamos, NM 87545, CIGDEM CAPAN, Physics and Astronomy, Washington State University, PO Box 642814, Pullman, WA 99164-2814, FILIP RONNING, JOE THOMPSON, ROMAN MOVSHOVICH, Los Alamos National Laboratory, Los Alamos, NM 87545, ANDREA BIANCHI, Department de Physique, Universite de Montreal, Montreal H3C 3J7, RICARDO URBANO, National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL 32306, HIRONORI SAKAI, Advanced Science Research Center, Japan Atomic Energy Agency, Tokai, Ibarakai 319-1195 — The experimentally determined superconducting condensation energy of La-doped $CeCoIn_5$ is interpreted to show that the superconducting fraction decreases linearly with La concentration, consistent with the measured residual normal fraction seen in the electronic specific gamma remaining in the superconducting state as $T \rightarrow 0K$. The In NQR data is also discussed. Our result points to an electronically inhomogeneous state that appears to be common to doped heavy Fermion materials near a quantum critical point.

[1]NSF-DMR-0801253

Zachary Fisk
Department of Physics and Astromony,
University of California, Irvine, Irvine, CA 92697

Date submitted: 23 Nov 2010 Electronic form version 1.4