Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Field-induced Fermi surface reconstruction and adiabatic continuity between antiferromagnetism and hidden-order state in URu_2Si_2
Y.J. JO, L. BALICAS, C. CAPAN, K. BEHNIA, P. LEJAY, J. FLOUQUET, J.A. MYDOSH, P. SCHLOTTMANN, Florida State University — Shubnikov-de Haas oscillations at very low temperatures and high magnetic fields reveal an abrupt reconstruction of the Fermi surface within the hidden-order phase of URu_2Si_2. Taken together with reported Hall effect results, this implies an increase in the effective carrier density and suggests spectrum of itinerant quasiparticles. While hydrostatic pressure favors antiferromagnetism in detriment to the hidden-order state, we found that it has a modest effect on the complex $H - T$ phase diagram. This suggests adiabatic continuity between the hidden-order and antiferromagnetism.

YounJung Jo

Date submitted: 17 Nov 2006 Electronic form version 1.4