Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Hidden order and unconventional superconductivity in URu_2Si_2 JEFFREY RAU, HAE-YOUNG KEE, University of Toronto — The nature of the so-called hidden order in URu_2Si_2 and the subsequent superconducting phase have remained a puzzle for over two decades. Motivated by evidence for rotational symmetry breaking seen in recent magnetic torque measurements [Okazaki et al. Science **331**, 439 (2011)], we derive a simple tight-binding model consistent with experimental Fermi surface probes and ab-initio calculations. From this model we use mean-field theory to examine the variety of hidden orders allowed by existing experimental results, including the torque measurements. We then construct a phase diagram in temperature and pressure and discuss relevant experimental consequences.

Jeffrey Rau
University of Toronto

Date submitted: 11 Nov 2011 Electronic form version 1.4