Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Current-Carrying States in Fulde-Ferrell-Larkin-Ovchinnikov superconductors JIN AN, CHIN-SEN TING, Texas Center for Superconductivity, University of Houston, CHIA-REN HU, Department of Physics, Texas A&M University — Fulde-Ferrell-Larkin-Ovchinnikov(FFLO) superconducting state is believed to be favorable in Pauli-limited heavy-fermion superconductors such as CeCoIn5. Based on Bogliubov de-Gennes equations, we present a theoretical study of current-carrying FFLO states, including the stability and characterization of a superconducting order parameter for a current-carrying FFLO state. Inhomogeneous and anisotropic current density distribution and quasi-particle current contribution related to the order parameter modulation and sign change are found in FFLO state, which are expected to provide an easy way to detect the existence of an FFLO state.

Jin An
Texas Center for Superconductivity, University of Houston

Date submitted: 15 Nov 2011 Electronic form version 1.4