

Abstract Submitted
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Angular Dependent Magnetic Properties of CeCoIn₅ at Low Temperatures¹ J.-H. PARK, R.L. STILLWELL², T.P. MURPHY, E.C. PALM, S.W. TOZER, NHMFL, Florida State University, Tallahassee, FL 32310, J.C. COOLEY, LANL, MST-6, Los Alamos, NM 87545 — The heavy-fermion compound CeCoIn₅ exhibits a superconducting transition at 2.3 K. As an unconventional superconductor, many unusual physical properties of the compound have been actively studied. In particular, evidence of a Fulde-Ferrell-Larkin-Ovchinnikov (FFLO) superconducting state in this compound was reported first by Radovan and co-workers.[†] At the lowest temperature (~ 20 mK), the FFLO state of CeCoIn₅ was observed in fields between 10 and 11.7 T when the *ab*-plane of the compound was placed parallel to the external magnetic field. In addition, at these low temperatures, the angular dependent peak effect was observed and interpreted as a crossover between Abrikosov and Josephson vortex lattices.[‡] Further experimental studies of the low temperature (> 12 mK) magnetic properties of CeCoIn₅, performed in various sample orientations with respect to magnetic field will be presented. [†]H.A. Radovan, et al., Nature **425** (2003) 51. [‡]H.A. Radovan, et al., Philosophical Magazine **86** (2006) 3569.

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