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Metamagnetism and Non Fermi Liquid behavior in CeIrIn5 C. CAPAN, F. RONNING, E.D. BAUER, R. MOVSHOVICH, M.F. HUNDLEY, J.D. THOMPSON, J.L. SARRAO, Los Alamos National Laboratory, Los Alamos NM 87545, L. BALICAS, T. MURPHY, E. PALM, D. HALL, H. RADOVAN, S. TOZER, National High Magnetic Field Laboratory, Tallahassee FL 32310-3706, R. GOODRICH, Department of Physics & Astronomy, Louisiana State University, Baton Rouge LA 70803-4001 — Investigations of transport and thermodynamic properties near a quantum phase transition have been subject of intense theoretical and experimental efforts in strongly correlated electron systems in recent years. The nature of low energy excitations near a quantum critical point is strikingly different from the Landau quasiparticles, resulting in strong deviations from Fermi Liquid theory in most properties at low temperatures. In this context, recent studies of Sr3Ru2O7 have raised the possibility of a quantum critical point associated with metamagnetism. CeIrIn5, a recently discovered heavy fermion superconductor, offers yet another playground for such investigations. Indeed, CeIrIn5 has peculiar properties at high magnetic fields, with a field induced Non Fermi Liquid behavior in both resistivity and specific heat up to 17T. A metamagnetic transition has also been reported for magnetic fields above 30T. Thus, it is natural to ask whether the Non Fermi Liquid behavior is a result of a quantum critical point associated with metamagnetism in CeIrIn5. We will present new results of resistivity and magnetization up to 33T in an attempt to address this issue.

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