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Magnetic Field Suppression of Ferromagnetism in Yb_2Pt_3 MARCUS BENNETT, University of Michigan, DMITRY SOKOLOV, University of Michigan, WILLIAM GANNON, University of Michigan, MEIGAN ARONSON, University of Michigan, CARL HENDERSON, University of Michigan, JASMINE MILLICAN, Louisiana State University, JULIA CHAN, Louisiana State University
— We have measured the heat capacity, resistivity and magnetization of single crystals of Yb_2Pt_3 grown from Pb flux. The magnetization is anisotropic and strongly non linear with field, with an Arrott plot analysis indicating ferromagnetic order. The zero field AC susceptibility is peaked at 2.4 K, where the zero field heat capacity shows a first order paramagnetic to ferromagnetic transition. This transition is suppressed by magnetic field, disappearing at a critical point, 1.75 T and 1.3 K. The zero field resistivity shows a metallic temperature dependence, and for all fields we find $\rho(T,H) = \rho_0(H) + A(H)T^2$ at sufficiently low temperature. The coefficient, A(H), has a strong maximum for H=1.75 T. It is remarkable that the application of a magnetic field decreases T_C in Yb_2Pt_3, contradicting conventional expectations.

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