## Abstract Submitted for the MAR08 Meeting of The American Physical Society

Magnetodynamics of Heavy Fermion  $YbCo_2Zn_{20}$  and  $YbFe_2Zn_{20}$ A.D. CHRISTIANSON, Oak Ridge National Laboratory, Oak Ridge 37831, TN USA, E.A. GOREMYCHKIN, Argonne National Laboratory, Argonne, IL 60439, USA, MICHAEL M. KOZA, Institut Laue-Langevin, FR-38042 Grenoble, France, J.L. ZARESTKY, Ames Laboratory, Iowa State University, Ames, Iowa 50011, USA, C.H. WANG, University of California, Irvine, California 92697, USA, A.I. KOLESNIKOV, Argonne National Laboratory, Argonne, IL 60439, USA, N. NI, S. JIA, E.D. MUN, S.L. BUD'KO, P.C. CANFIELD, Ames Laboratory and Department of Physics, Iowa State University, Ames, Iowa 50011, USA — We have performed inelastic neutron scatting experiments on the recently discovered heavy Fermion systems  $YbCo_2Zn_{20}$  and  $YbFe_2Zn_{20}$ . The magnetic excitation spectrum demonstrates that  $YbCo_2Zn_{20}$  exhibits crystal field dynamics with an overall splitting 2.72 meV. Despite this, the splitting between the ground state and first excited state is large enough such that the large low temperature electronic specific heat is not due to crystal field entropy and hence  $YbCo_2Zn_{20}$  is a truly heavy Fermion material.  $YbFe_2Zn_{20}$  exhibits significantly different spin dynamics. At 200 K the scattering is quasielastic and as the temperature is lowered the spectral weight is progressively shifted to finite energy transfers. This temperature dependence is characteristic of an intermediate valence system with an unusually low Kondo temperature of  $\sim 50$  K.

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Date submitted: 29 Nov 2007

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