

Abstract Submitted
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Diffuse Magnetic Scattering in GeCo_2O_4 M.K. CRAWFORD, R.L. HARLOW, DuPont, Wilmington, DE, S. HARA, Y. YOSHIDA, S.I. IKEDA, AIST, Tsukuba, Japan, P. MANUEL, D.T. ADROJA, ISIS, United Kingdom, J.W. LYNN, Y. CHEN, NIST, Gaithersburg, MD, R.A. FISHER, LBNL, Berkeley, CA — The spinel GeCo_2O_4 , in which the spin-3/2 Co^{2+} ions are located on the vertices of a lattice of corner-sharing tetrahedra, exhibits interesting magnetic and structural properties. GeCo_2O_4 has a Néel transition ($T_N = 20.6$ K) that coincides closely with a cubic to tetragonal structural phase transition, below which $c/a > 1$. In the past we have reported magnetic susceptibility, heat capacity, synchrotron x-ray powder diffraction, neutron powder diffraction and inelastic neutron scattering measurements for this material. In this talk we will describe the results of diffuse magnetic scattering measurements made at temperatures above and below T_N using the PRISMA spectrometer at ISIS. The sample was a single crystal grown by the floating zone technique at AIST. The presence of significant amounts of magnetic short-range order at temperatures well above T_N , and the effect of this short-range order upon the data obtained with other experimental techniques, will be described.

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