

Abstract Submitted
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Magnetic Diffuse Scattering in spinels GeCo₂O₄ (GCO) and GeNi₂O₄ (GNO) P. MANUEL, M.K. CRAWFORD, D.T. ADROJA, L.C. CHAPON, S. HARA, Y. YOSHIDA, S.I. IKEDA, J.W. LYNN, Y. CHEN, R.A. FISHER — Materials exhibiting geometrical magnetic frustration have been very topical in condensed matter physics due to their large ground state degeneracy usually leading to a great variety of behavior. GCO and GNO are spinels where the Co/Ni ions form a sublattice identical to the pyrochlore. This topology naturally leads to magnetic frustration which can be relieved to permit the appearance of longrange magnetic order. GCO has a Néel temperature of 21 K, below which a tetragonal distortion is observed. However, our heat capacity measurements show only about half of the entropy expected when integrated up to 75 K. This strongly suggests the existence of frustration which is evidenced by our neutron data where strong diffuse scattering (DF) is observed. GNO also exhibits strong DF at the same q-position but with different shape. We will present the neutron data alongside a Monte-Carlo analysis of the DF and the implications on the nature and strength of the different interactions in these two systems.

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