

Abstract Submitted
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Spin configurations in the frustrated spin system YBaCo_4O_7 by ^{59}Co NMR¹ SHAOJIE YUAN, MICHAEL HOCH, PHILIP KUHN, TIGLET BESARA, JEFF WHALEN, National High Magnetic Field Laboratory, FSU, THEO SIEGRIST, Florida State University, NHMFL, ARNEIL REYES, National High Magnetic Field Laboratory, FSU, JIM BROOKS, Florida State University, NHMFL, H. ZHENG, JOHN MITCHELL, Argonne National Laboratory, Argonne — The frustrated spin system YBaCo_4O_7 has both kagomé and triangular planes of cobalt ions alternating with each other. The cobalt spins in the triangular layers order antiferromagnetically below the Néel temperature at 106 K. The configurations of the cobalt spins have been studied by both neutron scattering² and zero applied field ^{59}Co NMR. While the triangular spin orientations are in agreement for the two approaches, this is not the case for the kagomé layers. The present in-field sample rotation NMR experiments confirm our previous finding that the triangular spins are aligned perpendicular to the [110] crystallographic direction and provide strong evidence that the spins in the kagomé layers are orthogonal those in the triangular layers in what may be described as an internal-field-induced spin-flop configuration.

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²D. D. Khalyavin, P. Manuel, J. F. Mitchell, and L. C. Chapon, Phys Rev B **82**, 094401 (2010).

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