Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Magnetic Ordering in Ba_2DyRuO_6[1] J. LAMSAL, Missouri University, W. YELON, Missouri University of Science and Technology, H. BLACKSTEAD, M. SMYLIE, University of Notre Dame, Q. CAI, Missouri University, W. JAMES, J. YANG, Missouri University of Science and Technology — Magnetization measurements and neutron diffraction (ND) studies have been carried out on the double perovskite ruthenate, Ba_2DyRuO_6. The low field magnetization data indicate ordering around 50K, a sharp rise below 8K and a possible transition around 25K. Rietveld analysis of ND data confirms antiferromagnetic ordering at 48K. The temperature dependence of the Ru moment appears to follow a Brillouin type curve down to the lowest temperature accessible, (12K), and there is no evidence for a transition around 25K. In contrast, the Dy moment is found to be proportional to the square of the Ru moment, implying that the Ru moment is the primary order parameter and that Dy ordering is driven by the Ru-Dy coupling. The ND experiment could not reach the temperature at which the magnetization rises sharply (8K), but following similar arguments, we suggest that this point represents the temperature at which the Dy-Dy interactions become larger than the Ru-Dy interactions, and may, thus, lead to a new structure.

[1]This work was supported by the NSF.

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Date submitted: 18 Dec 2008 Electronic form version 1.4