

Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Magnetic order and lattice anomalies in the J_1 - J_2 model system $V\text{MoO}_4$ ALESSANDRO BOMBARDI, Diamond Light Source, LAURENT CHAPON, ISIS-Rutherford Laboratory, IRENE MARGIOLAKI, ESRF, CLAUDIO MAZZOLI, ESRF, SABINE GHONTIER, CNRS, FABIENNE DUC, CNRS-Toulouse, PAOLO RADAELLI, ISIS-Rutherford Laboratory — High resolution x-ray and neutron powder diffraction measurements were performed on polycrystalline $V\text{MoO}_4$. Below $\simeq 40$ K the system orders in a simple Néel antiferromagnetic state (propagation vector $\vec{k} = 0$), indicating a dominant role of the nearest-neighbor interactions. The order is three dimensional but the reduced saturated magnetic moment m of 0.41 (1) μ_B/V^{4+} at 2 K indicates strongly 2D character and enhanced quantum fluctuations. On cooling, there is no evidence of a reduction of the crystal symmetry. However, neutron diffraction indicates an anomalous evolution of the lattice parameters, which can be related to the onset of magnetic correlations.

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Date submitted: 29 Nov 2005

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