

Abstract Submitted
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Neutrons Scattering Study of Magnetic Correlations in $Y_{0.7}La_{0.3}VO_3$ ¹ SUNG CHANG, NIST Center for Neutron Research, JIAQIANG YAN, Ames Laboratory, ROBERT MCQUEENEY, Iowa State University — RVO_3 (R = rare earth) perovskite vanadites exhibit multiple orbital and spin orderings and provide a unique opportunity to study the spin-orbital-lattice coupling of π -bonding t electrons. The nature of the orbital order in these vanadites has been a matter of significant controversy, particularly with respect to whether the different orbital-ordered phases of YVO_3 and $LaVO_3$ are best described by a novel orbital-Peierls model or more traditional Jahn-Teller interactions. Here we report on a neutron scattering study of the magnetic correlations in $Y_{0.7}La_{0.3}VO_3$, which may be expected to depend sensitively on the orbital degrees of freedom. The results are discussed in terms of the interplay between magnetism and orbital order.

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