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Magnetic interactions and orbital physics in RVO_3 perovskites J.-Q. YAN, Ames Laboratory, Ames, IA 50011, S. CHANG, C. BROWN, NIST Center for Neutron Research, National Institute of Standards and Technology, Gaithersburg, Maryland 20899, M. HEHLEN, F. TROUW, LANSCE, Los Alamos National Laboratory, Los Alamos, NM 87545, R.J. MCQUEENEY, Ames Laboratory and Department of Physics and Astronomy, Iowa State University, Ames, IA 50011 — We have performed inelastic neutron scattering study on high quality YVO3 and LaVO3 powders. The magnetic interactions determined from the scattering spectra for YVO3 agree with a previous single crystal study. [1] For LaVO3, a –Jab > Jc is in sharp contrast to the Jc > -Jab in the C-type magnetically (C-AF) ordered state of YVO3. The mechanism that greatly suppresses Jab in C-AF state of YVO3 will be discussed together with thermal conductivity [2] and Raman spectroscopy [3] results.
[1] C. Ulrich, et al., Phys. Rev. Lett. **91**, 257202 (2003).
[2] J.-Q. Yan, et al., Phys. Rev. Lett. **93**, 235901 (2004).
[3] S. Miyasaka, et al., Phys. Rev. B **73**, 224436 (2006).

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