

Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Investigating Magnetism in the Multiferroic $RA_3(BO_3)_4$ System at Low Temperature T. YU, H. ZHANG, New Jersey Inst of Tech, L. N. BEZ-MATERNYKH, L.V. Kirensky Institute of Physics, K. PAGE, Oak Ridge National Laboratory, Y.-S. CHEN, University of Chicago, T. A. TYSON, New Jersey Inst of Tech — The Multiferroic system $HoAl_3BO_3)_4$ is known to exhibit a strong coupling of magnetic field to the electrical polarization at low temperature. The nature of magnetic order and Ho site at low temperature is not known. However measurements reveal magnetic ordering in Ho site in $HoFe_3(BO_3)_4$ at low temperature. Our previous work revealed enhanced correlation between neighboring HoO_6 polyhedra for magnetic fields up to 3 T. In this work, we further investigate the origin of the magnetoelectric effect of the $RA_3(BO_3)_4$ system by neutron scattering and structural optimization with DFT calculation. This work is supported by DOE Grant DE-FG02-07ER46402.

Han Zhang
New Jersey Inst of Tech

Date submitted: 11 Nov 2016

Electronic form version 1.4