Materials Science and Technology Division
Materials Theory Group

"Magnetic and Magneto-Electric excitations in $BiFeO_3$"

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Abstract

$BiFeO_3$ is a multiferroic material with ferrolectric and antiferromagnetic transition temperatures much higher than room temperatures. Recent neutron scattering experiments show that magnetic excitations can be well-fitted by a Heisenberg Model with nearest and next-nearest interactions as well as Dzyaloshinskii-Moriya interactions, which is consistent with the magnetic structures of the material.

In this presentation, I will show our preliminary results on the magnetic and magneto-electric excitation spectra estimated from the best-fit model, and make the comparison with experimental results to point out consistencies and inconsistencies between the model and the experimental data.

Host: Satoshi Okamoto (576-1317, okapon@ornl.gov)