

Abstract Submitted
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Temperature dependence of acoustic and low-energy optic phonons in the multiferroic BiFeO₃ studied by inelastic neutron scattering GUANGYONG XU, ZHIJUN XU, JOHN SHNEELOCK, Brookhaven National Laboratory, PETER GEHRING, CHRIS STOCK, NIST Center for Neutron Research, MASA AKI MATSUDA, Oak Ridge National Laboratory, GENDA GU, Brookhaven National Laboratory, T. ITO, Natl Inst Adv Ind Sci & Technol, Tsukuba, Ibaraki 3058562, Japan, JINSHENG WEN, R.J. BIRGENEAU, UC Berkeley, STEPHEN SHAPIRO, Brookhaven National Laboratory — We report inelastic neutron scattering measurements on the acoustic and low-energy phonons in the multiferroic material BiFeO₃. The phonon dispersion in the (200) and (111) zones have been mapped out for temperatures between 300K to 750K. The temperature dependence of the dispersion and phonon intensities will be discussed. Possible connections between the the antiferromagnetic phase transition at 640K and anomalies in the phonon modes are observed.

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