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[001] electric field effect on phonons in PMN-32PT[1] JOHN SCHNEELOCH, Brookhaven National Laboratory, ZHIJUN XU, University of California, Berkeley, BARRY WINN, Oak Ridge National Laboratory, CHRIS STOCK, University of Edinburgh, PETER GEHRING, National Institute of Standards and Technology, GUANGYONG XU, Brookhaven National Laboratory — We report inelastic neutron scattering measurements on a single crystal of the relaxor ferroelectric 68%$Pb(Mg_{1/3}Nb_{2/3})O_3$-32%$PbTiO_3$ (PMN-32PT) under an external [001] electric field (0.5 kV/cm). In addition to the partial suppression of diffuse scattering intensities, as previously reported, we also see a field-induced change in acoustic phonon intensities and energies. The change is anisotropic, with clear differences between the [100] and [001] directions. We will discuss these results and their relation to possible changes in the domain structure under field and coupling between diffuse scattering and phonon modes.

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