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Phonon Shifts at the Superconducting Transition in κ-(BEDT-TTF)$_2$-Cu(NCS)$_2$[1] C. N. KODITUWAKKU, C. A. BURNS, X. WANG, Dept. of Physics, Western Michigan University, H. SINN, A. SAID, A. ALATAS, Advanced Photon Source, Argonne National Laboratory, H.H. WANG, U. GAEISER, J.A. SCHLUETER, Materials Science Division, Argonne National Laboratory — We have measured the phonon spectra above and below the superconducting transition in κ-(BEDT-TTF)$_2$-Cu(NCS)$_2$. This organic superconductor has a transition temperature near 10K. These measurements were carried out using inelastic x-ray scattering at sector 3ID at the Advanced Photon Source. The incident x-ray energy was 21.657 keV and the resolution of the spectrometer was about 2.0 meV. We have observed significant phonon shifts at several energies in these spectra at several points in the Brillouin zone. Here we discuss the behavior of the phonons and possible reasons for the shifts.

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