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Anisotropic phonon softening in URu_2Si_2 NICHOLAS BUTCH, MICHAEL MANLEY[1], JASON JEFFRIES, Lawrence Livermore National Laboratory, MARC JANOSCHEK[2], KEVIN HUANG, BRIAN MAPLE, UC San Diego, JEFFREY LYNN, NIST Center for Neutron Research — We studied the low-energy phonons of URu_2Si_2 via inelastic neutron scattering. At the wave-vectors associated with magnetic excitations, the phonons show surprisingly little modification. However, we find important temperature and direction dependence of the phonons in the basal plane. Possible ramifications for the symmetry of the hidden order will be discussed.

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