

Abstract Submitted
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Probing the anisotropic phonon attenuation in superconducting lead.¹ T.L. HEAD, J.P. WOLFE, University of Illinois Urbana-Champaign — Phonon imaging of single crystals of superconducting Pb have uncovered a strong attenuation of phonons in (111) planes. Early data by Wolfe and Short² raised the possibility of a spin-density-wave ground state as proposed by Overhauser and Daemen.³ This interpretation depends on the frequencies of the ballistic phonons, which previously were determined by a Planckian heater source and isotope scattering. We have designed and fabricated a low-pass filter in an attempt to select phonon energies below a characteristic activation energy, in order to clarify the source of the attenuation lines. We present new phonon-imaging data under various conditions and discuss the possible interpretations. ² Physica B 316-317 (2002) 107-109 ³ Phys. Rev. B 39, 6431 (1989)

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