

Abstract Submitted  
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**Phonon Dispersions of Thermoelectric SnSe**<sup>1</sup> CHEN LI, JIAWANG HONG, ANDREW MAY, JIE MA, TAO HONG, SONGXUE CHI, GEORG EHLERS, OLIVIER DELAIRE, Oak Ridge National Laboratory — SnSe has recently attracted significant interest as a thermoelectric material with very high  $zT > 2$  along two crystallographic axes. A favorable property of SnSe is its very low thermal conductivity, which is below  $1Wm^{-1}K^{-1}$  along all axes even at ambient temperature, and decreases with temperature. However, the degree of anisotropy of the thermal conductivity remains somewhat controversial. We present our results of detailed inelastic neutron scattering measurements of the phonon dispersions and their temperature dependence. The results are compared with first-principles calculations to investigate the origin of the low thermal conductivity and its anisotropy.

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