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Electron-Phonon Coupling in Two-Dimensional Germanene
RYAN STEIN, DAVID SCHAEFER, JIA-AN YAN, Department of Physics, Astronomy and Geosciences, Towson University 8000 York Road, Towson, MD 21252-0001, USA — The phonon properties of the two-dimensional honeycomb allotrope of germanium, germanene, were studied by first-principles calculations. We found that the highest optical branches on the phonon dispersions at Γ and K symmetry points of the first Brillouin zone exhibit similar behavior as in graphene and graphite, indicating possible Kohn anomalies in germanene. Electron-Phonon coupling for the high symmetric modes will be discussed.

Ryan Stein
Department of Physics, Astronomy and Geosciences,
Towson University 8000 York Road, Towson, MD 21252-0001, USA

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