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Heat transport and correlations in anharmonic oscillator chains, a molecular dynamics study MAXIME GILL-COMEAU, LAURENT J. LEWIS, Département de physique, Université de Montréal — It is well known that the anharmonic oscillator chain displays anomalous heat conduction, the most striking feature of which being a thermal conductivity diverging with length as $\kappa \propto L^{\alpha}$ where $\alpha = 2/5$ or $1/3$. By comparing MD simulations results with an analysis based on the use of the Peierls-Boltzmann equation, we shed light on the mechanisms behind this striking phenomenon in 1D and pseudo-1D systems. The possibility of persistent cross-mode correlations and its consequences were also investigated.

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