



华侨大学系统科学研究所

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学术报告

Renormalized phonons in nonlinear lattices: simple approach from equipartition theorem

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报告摘要:

In nonlinear systems, the integrability is usually broken and no exact normal modes can be obtained. However, the approximate or effect normal modes can be found whose dispersion relation is temperature or nonlinearity dependent.

In 1d atomic lattice systems, this so obtained approximate normal modes are called renormalized phonons. It can be theoretically derived from equipartition theorem. The well-known nonlinear FPU- β lattice will be used as an example to demonstrate the derivation of renormalized phonons. With simple approximations, both upper and lower limit of the renormalized phonon frequencies can be obtained via the equipartition theorem.

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地点：机电信息实验大楼B430室