

Abstract Submitted  
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**Phonon Dynamics in Carbon Nanotubes** ARUN BODAPATI,  
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University of Central Florida — Using vibrational mode analysis of pristine and  
defected carbon nanotubes we will demonstrate that defects cause a change in the  
spatial extension and polarization of phonons leading to a consequent loss of their  
ballistic nature. Furthermore, to gain a more detailed understanding of thermal  
energy flow in defected carbon nanotubes we use molecular dynamics simulation to  
investigate scattering of well-defined phonon wave-packets either by structural  
defects or by other phonons. The dependence of scattering of longitudinal and  
transverse acoustic phonons on their wavelengths will be also discussed.

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