UNIVERSITY OF SOUTH FLORIDA - PHYSICS COLLOQUIUM
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# Mechanical Properties and Resonance Carbon-Nanotube-Based NEMS Devices

## ABSTRACT

I will descuss our fabrication and measurement of carbon-nanotube-based nano-electro-mechanical devices (NEMS). We fabricate devices with a paddle-oscillator geometry which use multi-walled carbon nanotubes as torsion springs. We perform local force measurements on the devices to determine the torsional properties of the nanotubes, and discover that the nanotubes stiffen with repeated deflections. We also actuate the devices electrostatically, driving them both quasi-DC and on resonance. We optically detect the deflections to investigate the performance of the oscillators.