

## **Quantum "Mechanical" Circuits**

While micromechanical resonators are ubiquitous tools for applications from sensing to telecommunications, only recently are these engineered mechanical devices encountering the fundamental limitations and opportunities afforded by their true quantum mechanical nature. By incorporating microfabricated mechanical resonators into superconducting microwave circuits, we achieve the ability to both prepare and sense motion near their quantum ground state. This talk will discuss several recent experiments in which microwave photons are used to cool and to probe macroscopic mechanical systems in highly nonclassical states, such as squeezed states, Fock states and entangled states.

**Department of Physics  
University of Vermont**

**Theoretical and  
Applied Physics**

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(NIST)  
Boulder, Colorado**

**Wednesday, Sept. 25th**

**4:00 PM**

**Innovation Hall**

**Room E430**

**Refreshments will be available at**

**3:30 PM.**

**E217 Innovation**

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