



University
of Victoria

PHYSICS AND ASTRONOMY COLLOQUIUM (In Person Only)

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“Optomechanics in the microwave regime”

Abstract

Optomechanics explores the interaction between light and the mechanical motion of micro- and nano-scale systems, bridging the fields quantum optics and micromechanics. A typical setup features an optical cavity with one fixed and one mechanically responsive mirror. The motion of the mirror changes the cavity length, while the radiation pressure from photons within the cavity impacts the mirror's movement. This dynamic interplay lies at the heart of optomechanics and has been utilized for precision measurements and the quantum control of increasingly massive mechanical systems. In this colloquium, I will present the core concepts of optomechanics and our approach where the mechanical system is coupled to a superconducting circuit, providing the microwave analogue of optomechanics. Although this method focuses on microwave photons rather than visible light, I will highlight the potential of this approach, showcasing some of our latest experimental results.

Wednesday, September 25th, 2024

3:30 p.m. PST

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