

  
**Physics**  
AT QUEENS COLLEGE

# Colloquium Notice

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## *Graviton detection with quantum acoustic resonators*

Gravitons are a central prediction of quantum gravity, yet their detection has long been thought impossible. We recently showed, however, that single gravitons can be detected using quantum sensing with macroscopic quantum resonators, conceptually analogous to the photoelectric detection of photons. In this talk, I will first give a brief overview of recent ideas for testing quantum signatures of gravity in table-top experiments. I will then turn to the detection of individual, on-shell gravitons, which represents a conceptually new approach. After revisiting the conventional arguments for the impossibility of graviton detection, I will present the key insights that overturn this view, explain the novelties that make detection feasible, and discuss why this possibility has been overlooked until now. Finally, I will show how such detectors could be implemented in the near future and how they go beyond mere particle detection: they are sensitive to the quantum statistical properties of gravitational radiation and enable tests of key predictions of linearized quantum gravity - echoing the first explorations of quantum theory in the early 20th century.

Monday

**March 16, 2026**

Starts at 12:15 PM

Coffee at 12:00 PM

Physics Conference Room, SB B326

This talk is accessible via [Zoom](#) or use

**meeting ID 829 2687 2594** and **passcode 866995** to join