



# PHYSICS AND ASTRONOMY COLLOQUIUM

## Dr. Allison MacDonald

D-wave

**“Quantum annealing with  
the D-Wave processor”**

Abstract

As current transistor-based computational technologies reach their fundamental limitations, quantum computing offers a new paradigm that could radically increase our capacity for solving difficult problems. This talk will present an overview of quantum annealing as a specific method of quantum computation and

conducting flux  
processor,  
including materials simulations of topological phase transitions in frustrated magnetic systems. This work represents the first experimental demonstration of the Kosterlitz-Thouless phase transition (winner of the 2016 Nobel prize in physics) in a transverse-field Ising model, and brings to mind Richard Feynman's original vision for quantum computing.

Wednesday, November 20, 2019

3:30 p.m.

Bob Wright Centre A104