University of Victoria

PHYSICS AND ASTRONOMY COLLOQUIUM (Online)

Dr. Roxanne Guenette

Harvard University

"Neutrinos: From Zeros to Heroes?"

Abstract

"It is now commonly agreed that neutrinos could hold the key to many great mysteries of physics, such as the imbalance in the Universe between matter and anti-matter, and several current and next generation of experiments are gearing up to provide new answers. Neutrinos are also the only particles of the Standard Model that could be of Majorana nature, a characteristic that would give considerable strength to theories that propose to explain the mass of these elusive particles and that intend to explain the matter-antimatter asymmetry. After reviewing the intriguing properties of neutrinos and presenting the open questions of our field, I will explain how searching for neutrinoless double beta decays with Xenon High Pressure Time Projection Chambers (like the NEXT experiment is doing) could give us a unique opportunity to discover a Majorana neutrino. I will also discuss how such discovery would be a revolution for Particle Physics."

Wednesday, March 9, 2022

3:30 p.m. PDT

via Zoom: https://uvic.zoom.us/j/83486624455