University of Victoria

PHYSICS AND ASTRONOMY COLLOQUIUM (In Person & Online)

Dr. Deborah Harris

York University

"Interference Patterns with Neutrinos"

Abstract

"Neutrinos are fascinating particles because they were created less than a second after the Big Bang and hence are one of the few particles to provide a window into the creation of the universe. There are now a billion times more neutrinos than the particles that make up normal matter, yet we know little about neutrinos because they rarely interact. We know neutrinos come in three different kinds, and they transform (or oscillate) from one kind to another (a discovery that received the 2015 Physics Nobel Prize). The fact that neutrinos oscillate means that we can learn a great deal about them by studying what are effectively interference patterns that arise after neutrinos made in a laboratory propagate over hundreds of kilometers. To do that though we need to build enormous detectors, very intense neutrino beams, and to learn more than ever about the way neutrinos interact in matter. This talk will present the current status of neutrino oscillation measurements and how we are preparing for the next generation of measurements, in particular the Deep Underground Neutrino Experiment."

Wednesday, November 16, 2022

3:30 p.m. PDT

Bob Wright Centre B150

Zoom link available on Uvic Event Calendar