



University
of Victoria

PHYSICS AND ASTRONOMY COLLOQUIUM (In Person & Online)

Dr. Iris Dillmann

TRIUMF & University of Victoria (Adjunct)

**“(Some) Activities and Perspectives in Nuclear Astrophysics
Research at TRIUMF”**

Abstract

“TRIUMF hosts the Isotope Separator and ACcelerator (ISAC) facility which is a radioactive ion beam facility of the isotope separation on-line (ISOL) type. Rare isotopes are produced by spallation and fragmentation reactions in the ISAC production targets which are impinged by 500 MeV proton beams from the main cyclotron.

The radioactive beam production facilities at TRIUMF have been undergoing a major expansion over the past decade. The Advanced Rare IsotopE Laboratory (ARIEL) provides a new high-power superconducting electron linear accelerator (e-linac, up to 35 MeV, 10 mA, 350 kW) and the associated infrastructure. In 2026 and 2027, the parallel operation of the existing ISAC proton beamline, the high-power ARIEL e-linac photofission driver, and a second proton beamline to the ARIEL target stations, will establish a unique multi-user capability that will provide first two, and then three simultaneous radioactive beams, ultimately tripling the beamtime available to the suite of state-of-the-art research infrastructure at ISAC.

I will give an introduction to the Nuclear Physics Department and Nuclear Theory Group at TRIUMF and present some recent results with astrophysical focus. Some future plans for experiments will be presented, including the proposed TRIUMF Storage Ring (TRISR) facility to perform direct neutron capture cross section measurements on short-lived nuclei.”

Wednesday, March 1, 2023

3:30 p.m. PST

ECS 116

Zoom link available on Uvic Event Calendar