Size of

PHYSICS AND ASTRONOMY COLLOQUIUM (Online)

Dr. Bradley Sherrill

FRIB

“Scientific Opportunities with the Facility for Rare Isotope Beams”

Abstract

“Nuclear science attempts to understand strongly-interacting material. The atomic nucleus, which comes in perhaps 10,000 different varieties, is perhaps the most familiar example. When completed in February 2022, the Facility for Rare Isotope Beams, FRIB, will provide access to an unprecedented range of isotopes (the varieties) of the elements up to uranium. This is possible due to FRIB’s very high-power superconducting linear accelerator that can deliver 400 kW of beam power for all stable isotopes and FRIB’s efficient isotope production and separation schemes. The goal of the research is to develop a predictive model of atomic nuclei, understand the chemical history of the Universe, search for evidence of new particles and interactions, and explore the applications of new isotopes and accelerator technology to societal problems. The hope is to learn the answers to basic questions like what are the limits of atomic nuclei in size and mass, what astrophysical environment is responsible for making gold and uranium, and why is there more matter than anti-matter in the universe. The talk will review our current knowledge and give examples of how research at FRIB will advance our understanding.”

Wednesday, January 26, 2022

3:30 p.m. PDT

via Zoom: https://uvic.zoom.us/j/88979572102