University of Victoria

PHYSICS AND ASTRONOMY COLLOQUIUM (In Person Only)

Dr. Suzie Sheehy

University of Melbourne

"Advancing Medical Accelerators: toward smaller, faster, and more sustainable technologies"

Abstract

In this Colloquium, Associate Professor Dr. Suzie Sheehy will give an overview of some of the research projects underway in the Medical Accelerator Physics group at the University of Melbourne, Australia, with a focus on the future potential of novel accelerator technologies. Dr. Sheehy will share her work toward making accelerators smaller, cheaper and more sustainable while increasing their utility in real world applications. Two main projects will be discussed: first, the concept of 'scaling down and speeding up' proton therapy with ultra-rapid dose delivery. An innovation in accelerator physics has enabled the design of a novel beamline with the potential to transform proton therapy. Dr. Sheehy's team is now building the first scaled experimental technology demonstrator – the TURBO 'Technology for Ultra Rapid Beam Operation' project – in collaboration with Harvard/MGH and Pyramid Ltd, via a new 7-year collaborative research programme funded by the National Institutes for Health (USA). Dr. Sheehy will also discuss the X-LAB 'X-band Laboratory for Accelerators and Beams' launched in 2023 in collaboration with CERN: this is the first Southern Hemisphere high power X-band accelerator facility. This facility is about to undergo a transformation from an RF test system into a compact electron accelerator and beamline, unlocking new capacity toward compact light sources and Very High Energy Electron radiotherapy.

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3:30pm PST

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