



Department of Physics & Astronomy Colloquium
Canadian Association of Physicists Lecture

Radiofrequency Superconductivity for Particle Accelerator

Prof. Tobias Junginger
University of Victoria / TRIUMF



Abstract: Did you know that MRI machines in hospitals work without a continuous power source, as the current in the magnet flows without any resistance – or that superconductors enable magnetic levitation trains to reach speeds of up to 600 km/h? These are just two examples of the applications of superconductivity, a phenomenon discovered over 100 years ago through pure scientific curiosity. In this colloquium, I will begin with a basic introduction to the principles of superconductivity and then explore how this phenomenon is harnessed in particle accelerators, particularly in the design and operation of radiofrequency (RF) cavities at TRIUMF and other facilities worldwide. Superconductors behave quite differently under radiofrequency conditions compared to direct current (DC) used in magnets, necessitating specialized research in material science. Moreover, the exceptionally low energy dissipation of SRF technology has promising implications for future advancements in quantum technology.

Thursday 03 April 2025, 1:30-2:45 PM Mountain Time

The talk will be in person in
Science Commons SA 8003

Attendance can be in-person or via Zoom:

<https://uleth.zoom.us/j/98735210255>

Everyone welcome!

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