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TRIUMF e-linac as driver for FLASH, DarkLight and ARIEL

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The linear accelerator for electrons at TRIUMF is one of the main drivers for its Advanced Rare Isotope Laboratory (ARIEL) project. The electron linac was designed and built for this purpose and is in its final commissioning stage with the capability of 10mA 30MeV CW superconducting machine. ARIEL will expand TRIUMF's ability to produce rare isotope beams. But the potential for the linac is far more than this one purpose. Taking advantage of its design, the e-linac is in a stage to serve the first experiments. These experiments will happen at different energies and different time scales. The FLASH experiment, running at the first acceleration stage, will investigate the influence of short but high intense radiation pulses for cancer therapy. The DarkLight experiment, running at the second acceleration stage, will investigate the possible existence of a dark fifth-force carrier, which could explain the Atomki anomaly.

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