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High-Precision Branching Ratio Measurement for the Superallowed β^+ emitter ^{74}Rb RYAN DUNLOP, University of Guelph — Precision measurements of superallowed Fermi beta decay allow for tests of the Cabibbo-Kobayashi-Maskawa matrix (CKM) unitarity, the conserved vector current hypothesis, and the magnitude of isospin-symmetry-breaking effects in nuclei. A high-precision measurement of the branching ratio for the β^+ decay of ^{74}Rb has been performed at the Isotope Separator and ACcelerator (ISAC) facility at TRIUMF. The 8π spectrometer, an array of 20 close-packed HPGe detectors, was used to detect gamma rays emitted following the decay of ^{74}Rb. PACES, an array of 5 Si(Li) detectors, was used to detect emitted conversion electrons, while SCEPTAR, an array of plastic scintillators, was used to detect emitted beta particles. In this talk, the importance of the branching ratio measurement of the ^{74}Rb superallowed decay will be discussed and preliminary results from the recent measurements at ISAC will be presented.

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