

Abstract Submitted
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Precision Measurements in ^{37}K ¹ MELISSA ANHOLM, University of Manitoba, TRIUMF, DANIEL ASHERY, Tel Aviv University, SPENCER BEHLING, BENJAMIN FENKER, DAN MELCONIAN, MICHAEL MEHLMAN, Texas A&M University Cyclotron Institute, JOHN BEHR, ALEXANDRE GORELOV, KONSTANTIN OLCCHANSKI, CLAIRE PRESTON, CLAIRE WARNER, TRIUMF, GERALD GWINNER, University of Manitoba — We have performed precision measurements of the kinematics of the daughter particles in the decay of ^{37}K . This isotope decays by β^+ emission in a mixed Fermi/Gamow-Teller transition to its isobaric analog, ^{37}Ar . Because the higher-order standard model corrections to this decay process are well understood, it is an ideal candidate for improving constraints on interactions beyond the standard model. Our setup utilizes a magneto-optical trap to confine and cool samples of ^{37}K , which are then spin-polarized by optical pumping. This allows us to perform measurements on both polarized and unpolarized nuclei, which is valuable for a complete understanding of systematic effects. Precision measurements of this decay are expected to be sensitive to the presence of right-handed vector currents, as well as a linear combination of scalar and tensor currents. Progress towards a final result is presented here.

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