

Abstract Submitted
for the DNP10 Meeting of
The American Physical Society

Precise Half-Life Measurement of ^{46}V H.I. PARK, J.C. HARDY, V.E. IACOB, L. CHEN, J. GOODWIN, N. NICA, E. SIMMONS, L. TRACHE, R.E. TRIBBLE, Texas A&M University — The ^{46}V is one of the key superallowed transitions contributing to precision tests of the conserved vector current hypothesis and the unitarity of the Cabibbo-Kobayashi-Maskawa matrix. Recent Penning-trap Q_{EC} measurements of the superallowed β decay of ^{46}V showed an earlier reaction-based result to be wrong and raised the Ft value by nearly three standard deviations from the average of all other well-known superallowed transitions. This anomaly raised the possibility of systematic effects for all reaction-based Q -value measurements and led to a theoretical reexamination of the isospin-symmetry-breaking corrections for superallowed decays. The improved corrections removed the anomalous result of ^{46}V and restored agreement among the corrected Ft values. Throughout these changes, the previously accepted half-life of ^{46}V was assumed to be completely correct. We have now tested this assumption by measuring a new precise half-life of ^{46}V . The preliminary result, 422.67(10) ms, agrees with but is more precise than previous values.

H.I. Park
Texas A&M University

Date submitted: 29 Jun 2010

Electronic form version 1.4