

Abstract Submitted
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Measurement of Branching-Ratios in the β Decay of ^{38}Ca H.I. PARK, J.C. HARDY, V.E. IACOB, M. BENCOMO, L. CHEN, J. GOODWIN, V. HORVAT, N. NICA, B. ROEDER, L. TRACHE, R.E. TRIBBLE, Texas A&M University — Currently, the most stringent test of the unitarity of the CKM matrix depends on results from precise ft -value measurements of superallowed beta decays. One of the key elements of this test is the calculated isospin-symmetry-breaking (ISB) correction that must be applied to each experimental ft value in order to extract a corrected Ft value. According to conserved vector current, the Ft values for all such transitions should be the same, so the efficacy of a particular set of ISB correction terms can be judged by whether they satisfy this condition. This test becomes even more demanding if additional superallowed ft values can be measured, especially for cases where the ISB correction is expected to be unusually large. The case of ^{38}Ca is particularly interesting because its total ISB correction is calculated to be one of the largest in the sd shell. However, being a $T_Z = -1$ nucleus decaying to an odd-odd $T_Z = 0$ daughter, it has multiple beta-decay branches. This presentation focuses on progress in our measurement of the branching-ratio for the superallowed $0^+ \rightarrow 0^+$ transition from ^{38}Ca . The challenges remaining before we reach our goal of 0.1% precision will be discussed, and preliminary results presented.

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