Abstract Submitted
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High precision half-life measurement of the isobaric analogue decay of ^{29}P[1] P.D. SHIDLING, V. E. IACOB, J.C. HARDY, G. CHUBARIAN, V. KOLHINEN, D. MCCLAIN, M. NASSER, ASIM OZMETIN, H.I. PARK, B.T. ROEDER, A. SAASTAMOINEN, BENJAMIN SCHROEDER, DAN MELCONIAN, Cyclotron Institute, Texas AM University, FUNDAMENTAL WEAK INTERACTION TEAM — A set of five mirror nuclei are currently being used as an independent source to test the unitarity of the CKM matrix, including ^{29}P which is currently the least precise of the set. The precision of the *ft* value is currently limited by the 0.14% uncertainty in the half-life. In order to improve the world half-life value, a precision half-life measurement of ^{29}P has been performed using the MARS spectrometer and a fast-tape-transport system. The ^{29}P was produced via the p(^{30}Si,2n)^{29}P reaction in inverse kinematics at a primary beam energy of 24 MeV/u. The MARS spectrometer transported the secondary beam and implanted the ^{29}P in an aluminized Mylar tape with purity greater than 99.9%. The fast-tape-transport system, quickly transported the sample to a well shielded location, stopping it in the center of the gas-flow proportional counter. The recorded data was separated into several runs, each characterized by a different combination of experimental conditions. An overview of this 0.02 % measurement will be presented.

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