Abstract Submitted
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Ultra-High Precision Half-Life Measurement for the Superallowed β^+ Emitter ^{26}Al^m P. FINLAY, G. DEMAND, P.E. GARRETT, K.G. LEACH, A.A. PHILLIPS, C.S. SUMITHRARACHCHI, C.E. SVENSSON, S. TRIAMBAK, University of Guelph, G.C. BALL, D. BANDYOPADHYAY, M. DJONGOLOV, S. ETTENAUER, G. HACKMAN, C.J. PEARSON, S.J. WILLIAMS, TRIUMF, C. ANDREOIU, D. CROSS, Simon Fraser University, R.A.E. AUSTIN, St Mary's University, G.F. GRINYER, NSCL/MSU, J.R. LESLIE, Queens University — The calculated nuclear structure dependent correction for ^{26}Al^m ($\delta_C - \delta_{NS} = 0.305(27)\%$ [1]) is smaller by nearly a factor of two than the other twelve precision superallowed cases, making it an ideal case to pursue a reduction in the experimental errors contributing to the $\mathcal{F}t$ value. An ultra-high precision half-life measurement for the superallowed β^+ emitter ^{26}Al^m has been made using a 4π continuous gas flow proportional counter as part of an ongoing experimental program in superallowed Fermi β decay studies at the Isotope Separator and Accelerator (ISAC) facility at TRIUMF in Vancouver, Canada, which delivered a beam of $\sim 10^5$ ^{26}Al^m/s in October 2007. With a statistical precision of $\sim 0.008\%$, the present work represents the single most precise measurement of any superallowed half-life to date.

[1] I.S. Towner and J.C. Hardy, Phys. Rev. C **77**, 025501 (2008).

Paul Finlay
University of Guelph

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