

Abstract Submitted
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Confirmation of the Precise Half Life of ^{26}Si V. IACOB, V. GOLOVKO, J. GOODWIN, J.C. HARDY, N. NICA, H.I. PARK, L. TRACHE, R.E. TRIBBLE, Cyclotron Institute at Texas A&M University — Precise ft -values (with uncertainties below 0.1%) for superallowed $0^+ \rightarrow 0^+$ β transitions provide a demanding test of the Standard Model *via* the unitarity of the Cabibbo-Kobayashi-Maskawa matrix. Our preliminary report of such a measurement for the half-life of ^{26}Si [1], was consistent with the previously accepted value but turned out to be higher than a subsequent result published in 2008 [2]. This prompted us to repeat the measurement described in [1] with increased statistics and with a strong focus on all experimental details that could have generated a biased result. We collected more than 200 million ^{26}Si nuclei in 60 separate runs, which differed from one another in their discriminator threshold, detector bias or dominant dead-time setting. We repeatedly verified and confirmed the stability of the source purity and detector response function. The analysis of these separate runs shows no systematic bias with these parameters and confirms our initial result [1]. The discrepancy between our result and that of reference [2] can be accounted for by the latter's neglect [3] of the difference in beta-detection efficiencies between the parent and daughter decays. Our preliminary result is 2245(3) ms, with the final analysis expected to yield an uncertainty of 0.05% or better. [1] V. Iacob *et al.*, Bulletin APS 53, (12) DNP-Meeting 2008 [2] I. Matea *et al.*, EPJ A37, 151 (2008) [3] B. Blank, private communication

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