

Abstract Submitted
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High Precision Measurement of the Lifetime of ^{19}Ne LEAH BROUSSARD, Duke University — The $T=\frac{1}{2}$ mirror transitions, such as the β^+ decay of ^{19}Ne , have been identified as excellent candidates for high precision studies of the weak interaction in the Standard Model, complementary to the well-studied $0^+ \rightarrow 0^+$ decays and neutron decay measurements. The Triangle Universities Nuclear Laboratory (TUNL) has developed an experiment to perform high precision lifetime measurements using the Trapped Radioactive Isotopes Microlaboratories for fundamental Physics (TRI μ P) facility at the Kernfysich Versneller Instituut (KVI) in Groningen, the Netherlands. We use a custom tape drive system to collect and transport the purified isotope from the TRI μ P isotope separator to the HPGe clover detector array, where annihilation radiation is detected in coincidence. We will discuss analysis of systematic uncertainties due to contamination, diffusion, and rate-dependent effects and present measurement results.

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