Abstract Submitted
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M1 width of the 2_1^+ state in ^{22}Na and searches for tensor contributions to beta decays[1] DEVIN SHORT, ALEJANDRO GARCIA, University of Washington, SMARAJIT TRIAMBAK, TRIUMF, STEVEN SEININGER, DAVID WILLIAMS, University of Washington — A determination of the β-γ angular correlation from ^{22}Na beta decay has been used to extract induced tensor current contributions to the weak interaction. The result, combined with other available data, yielded an unexpectedly large breaking of the Conservation of the Vector Current, a fundamental assumption of the Standard Model. A weak link in the data used for this analysis is the weak magnetism form factor, which is extracted from an independent unpublished determination of the analog isovector magnetic dipole ($2^+ \rightarrow 3^+$) γ-ray transition strength to the ground state of ^{22}Na which was limited by low statistics. We have run an experiment seeking to improve on those results by using a ^{21}Ne(p,γ) resonance at $E_p = 1112$ keV, leading to a $E_x = 7800 \rightarrow 1952 \rightarrow 0$ keV γ cascade in ^{22}Na. Angular correlation data were acquired using coincidence γ-rays in order to extract the M1-E2 mixing ratio. This, in conjunction with the 1952 keV branching ratio, will allow for a reliable determination of the M1 width. We are presently running Monte Carlo simulations that will help determine the absolute efficiency of our apparatus in order to extract the needed information.

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