

Abstract Submitted
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$^{32}\text{S}(p, \gamma)$ and its relevance to calibrating a ^{33}Ar beta-delayed proton spectrum SMARAJIT TRIAMBAK, ALEJANDRO GARCIA, DAN MELCONIAN, University of Washington, MEGHAN MELLA, University of Northern Colorado, OWEN BIESEL, University of Washington — Bounds on scalar contributions to the weak-interaction have been obtained from a measurement of the ^{32}Ar $e^+ - \nu$ correlation which is determined from the shape of the beta-delayed proton spectrum.¹ The proton-energy calibration plays an important role and is obtained using delayed proton groups from ^{33}Ar corresponding to resonances in $^{32}\text{S}(p, \gamma)$. In order to check for potential systematic effects and to improve the precision of the above experiment we have performed a high precision measurement of excitation energies of the relevant states corresponding to $^{32}\text{S}(p, \gamma)$ resonances. We also measured the relative gamma branches and width of the second $J^\pi = 3/2^+$ excited state in ^{33}Cl . The relative gamma branches are in significant disagreement with a previous measurement². Using our value for the width we are able to resolve an apparent discrepancy.

¹E. G. Adelberger *et al*, Phys. Rev. Lett, **83**, 1299 (1999)

²M. M. Aleonard *et al*, Nucl. Phys. **A 257**, 490 (1976)

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