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The β Decay of ^{35}Mg and the Structure of ^{35}Al ¹ A. B. CARLS, M. M. RAJABALI, J. E. ASH, Tennessee Tech University, GRIFFIN COLLABORATION — Far from the line of beta-stability, the well described shell structure of nuclei falls apart. Near the $N = 20$ shell closure lies the island of inversion, an area in which the nuclei exhibit ground states deformed with an intruder configuration. The ^{35}Al nucleus is near this region and whether it belongs to the island is a focus of this study. The experiment to study the β decay of ^{35}Mg was performed at TRIUMF Laboratory. Studying the resulting data provides the information to obtain half-life measurements for ^{35}Mg and ^{35}Al , new level information for ^{35}Al , and provides branching ratios for the feeding of the Si decay chain from Mg. Analyzing the data from the isotope implantation and decay cycles yielded spectra featuring the exponential decay of the nuclei. Fitting this curve will provide the desired half-lives for ^{35}Mg and ^{35}Al . The level scheme for ^{35}Al will be pieced together through a methodical study of the $\gamma - \gamma$ coincidences with in a $\beta - \gamma$ time difference gate. A detailed description of the methods for eliminating erroneous and unnecessary data will be presented along with the results.

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