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THE $^{51}\text{V}(p,n)^{51}\text{Cr}$ REACTION AT $E_p = 160$ MeV

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The $^{51}\text{V}(p,n)^{51}\text{Cr}$ reaction has been studied at $E_p = 160$ MeV using the IUCF beam swinger facility. Data have been obtained at several angles up to $\theta_L = 20^\circ$. The zero degree spectrum (Fig. 1) is used to obtain a $\Delta L = 0$ response function from which Gamow-Teller strength is derived. This is presented integrated in 1 MeV bins in the shaded area of Fig. 2. A shell model calculation of the GT strength distribution is also shown in Fig. 2 and is in excellent agreement with the data. The integrated experimental GT strength of 12.6 ± 2.5 is $(63 \pm 13)\%$ of the total theoretical strength of 20.14.

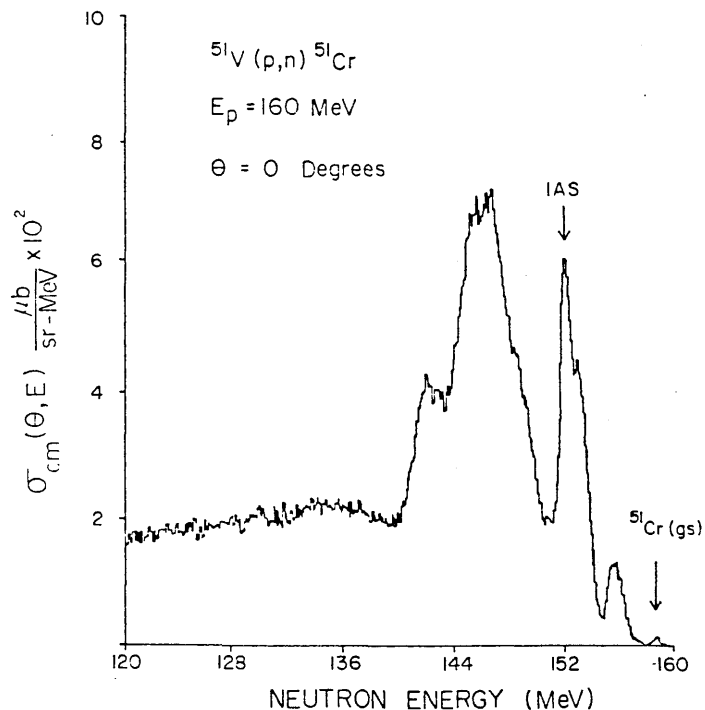


Figure 1. Zero-degree spectrum measured for the $^{51}\text{V}(p,n)^{51}\text{Cr}$ reaction.

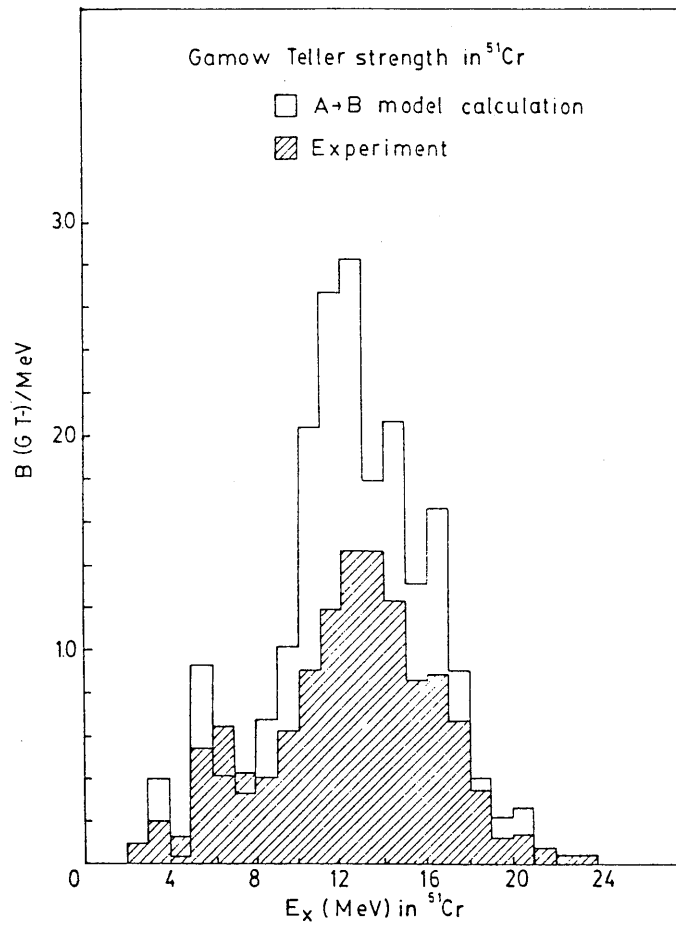


Figure. 2. Comparison of the measured Gamow-Teller strength distribution with the results of a shell model calculation.