

SCATTERING OF POLARIZED PROTONS FROM ${}^6,{}^7\text{Li}$ at 200 MeV

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Differential cross sections and analyzing powers for elastic and inelastic scattering of 200 MeV polarized protons from ${}^6\text{Li}$ and ${}^7\text{Li}$ have been measured in the angular range from $10^\circ < \theta_{\text{cm}} < 60^\circ$ using the QDDM spectrometer. Typical spin up spectra at $\theta_{\text{lab}}=14^\circ$ degrees are shown in Figs. 1 and 2. Excitation of the 0^+ , T=1 state at 3.56 MeV in ${}^6\text{Li}$ is clearly seen. The transition from the (1^+ , T=0) ground state to this 0^+ state has the same quantum numbers as the transition

for the 15.11-MeV state in ${}^{12}\text{C}$, but different amplitudes are expected to contribute. Angular distributions for each of the states seen in these ${}^6,{}^7\text{Li}$ spectra are being extracted and analyzed. The angular distribution for the ($1/2^-$, $1/2^+$) state at 0.4776 MeV in ${}^7\text{Li}$ (Fig. 2) is expected to allow determination of M_1 strength.

Optical model analysis of the elastic scattering data is in progress.

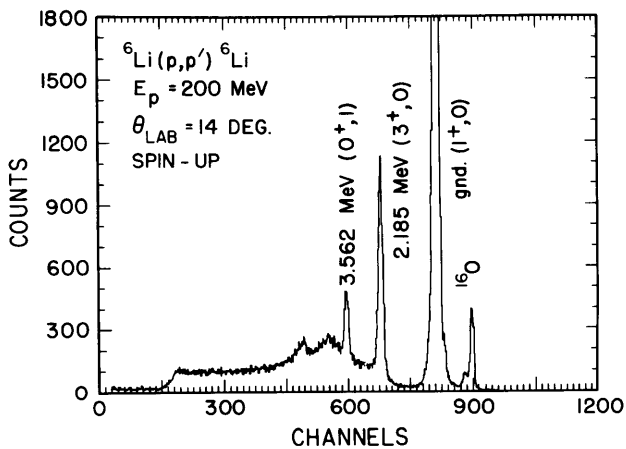


Figure 1. ${}^6\text{Li}(p,p')$ spectrum.

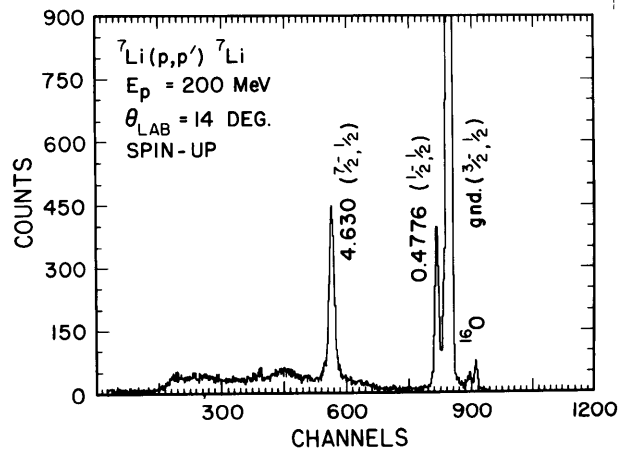


Figure 2. ${}^7\text{Li}(p,p')$ spectrum.