

THE ${}^6,{}^7\text{Li}(p,n){}^6,{}^7\text{Be}$ REACTIONS AT $E_p=80$ MeV

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The beam swinger facility at IUCF was employed to study the ${}^6,{}^7\text{Li}(p,n){}^6,{}^7\text{Be}$ reactions at a proton bombarding energy of 80 MeV. A 62 m flight path and time compensated neutron detectors were used, achieving a neutron energy resolution less than 400 keV. Figure 1 shows representative spectra for the ${}^7\text{Li}(p,n)$ reaction at $\theta=0^\circ$ and 26° . Figure 2 shows spectra for the ${}^6\text{Li}(p,n)$ reaction at the same lab angles. Angular distributions up to $\theta_{\text{lab}}=25^\circ$ have been obtained for

the $L=0$ g.s. transitions to ${}^6,{}^7\text{Be}$ and also for the transition to the 0.43 MeV state in ${}^7\text{Be}$. Macroscopic calculations agree rather well with the observed angular distributions to states in ${}^7\text{Be}$; however, this is not the case for the ${}^6\text{Li}(p,n){}^6\text{Be}(\text{g.s.})$ transition. Microscopic calculations are in progress.

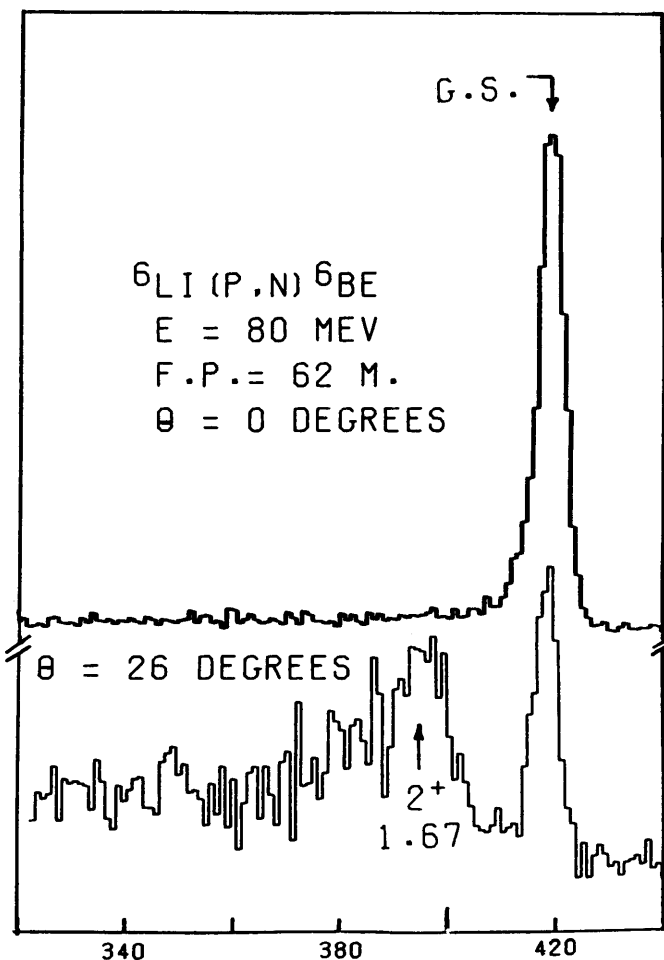
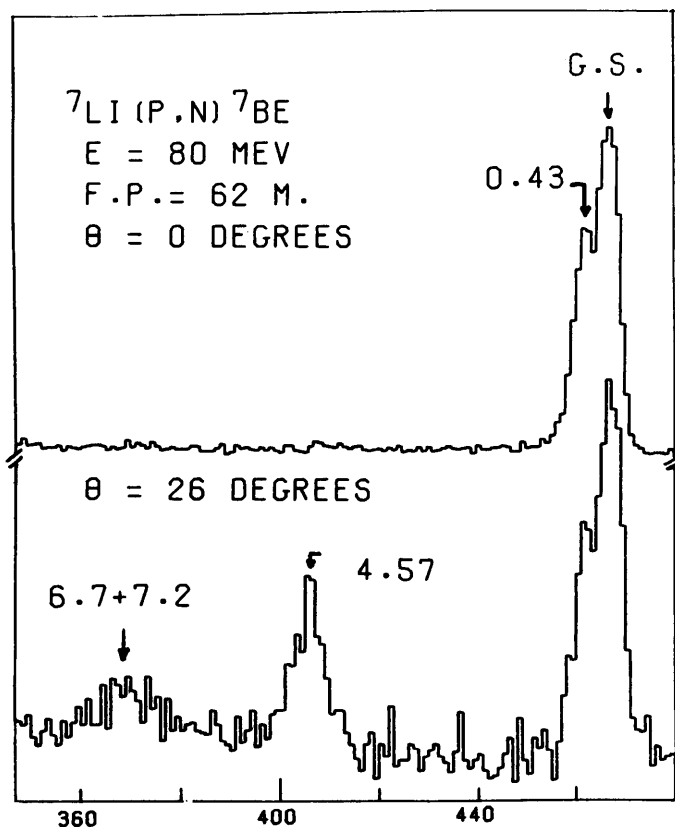


Figure 1. Energy spectra for the ${}^7\text{Li}(p,n){}^7\text{Be}$ reaction at 0° and 26° .

Figure 2. Energy spectra for the ${}^6\text{Li}(p,n){}^6\text{Be}$ reaction at 0° and 26° .