

${}^7\text{Li}(\pi^+, \pi^-)$ 1981SeZR

Type	Author	History	Citation	Literature Cutoff Date
Full Evaluation	J. Kelley, C. G. Sheu		ENSDF	01-June-2014

An apparently unpublished experimental result on ${}^7\text{Li}(\pi^+, \pi^-)$ is contained in a conference proceedings overview of pion induced measurements carried out at the EPICS facility at LAMPF.

The review indicates a 180 MeV π^+ beam impinged on a ${}^7\text{Li}$ target, and the reaction π^- particles were momentum analyzed in a QQDD magnetic spectrometer. The missing mass spectrum is deduced.

The missing mass spectrum shows a clear indication of the ground state, with some indication of a possible excited state. However, a broad continuum background, attributed to multi-body phase-space breakups could not be well fit with reasonable assumptions for ${}^4\text{He}+3\text{p}$, ${}^5\text{Li}+2\text{p}$ and ${}^6\text{Be}+\text{p}$ contributions. A best fit to the data indicated a mass excess of $\Delta M=27.80$ MeV *10* with $\Gamma=1.2$ MeV 2 for the ground state, and suggestive evidence for a narrower excited state at $E_x \approx 1.5$ MeV.

See other measurements and analysis of partial cross sections in ([1984Gr27](#), [1985La20](#), [1989Gr06](#), [1998Pa40](#), [2000Dr19](#), [2007Fo05](#)).

 ${}^7\text{B}$ Levels

E(level)	Γ	Comments
0 $\approx 1.5 \times 10^3?$	1.2 MeV 2	Analysis of the missing mass spectrum indicates $\Delta M=27.80$ MeV <i>10</i> .