^{7}Li(π^{-},π^{+}) 1981Ev01,2007Fo05

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	K. Setoodehnia, J. H. Kelley, J. E. Purcell	ENSDF	28-September-2023

1981Ev01: A π^{-} beam at 102 MeV (produced at the Swiss Institute for Nuclear Research, SIN) was focused onto a thick ^{7}Li target. The π^{+} reaction products were recorded in an emulsion stack (prepared at the Laboratory of Nuclear Problems at JINR) placed at 30° to the incident beam and shielded with lead bricks. In this early study of the ^{7}Li(π^{-},π^{+})^{7}H reaction, no evidence of resonances in ^{7}H was seen in the spectrum of outgoing π^{+}, but the histogram of the outgoing π^{+} favored a final state as a triton+^{4}n (tetraneutron) over a ^{3}H+4n or a proton+6n. The authors determined an upper limit of 1.0×10^{-31} cm^{2}/sr at (90% confidence limit) for the differential cross section corresponding to the production of ^{7}H.

2007Fo05, 2007FoZZ: These authors measured all inclusive double charge exchange by measuring the doubly differential cross sections, $d^{2}\sigma/d\Omega dE_{\pi}$, at three to five angles in the range 25°−130°, for incident pion energies between 120 and 240 MeV. Some structure in the cross section is reported, but there is no explicit mention of ^{7}H states. Cross sections are below 0.1 μb/sr in a wide $\theta_{c.m.}$=0°−50° region.