

Recent Results on Mesonic Weak Decays of Λ -Hypernuclei with FINUDA

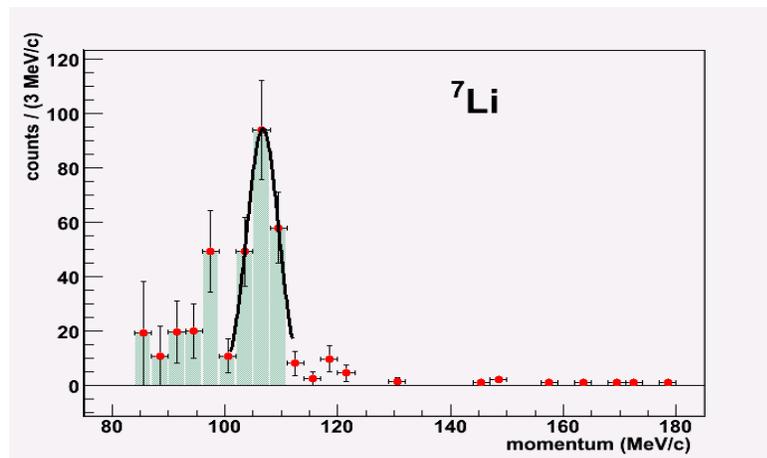
Elena Botta on behalf of the FINUDA Collaboration
I.N.F.N. - Sezione di Torino and
Dipartimento di Fisica Sperimentale - Universita' di Torino

Recent results obtained by analyzing the data collected up to now by the FINUDA spectrometer [1] at the DAΦNE complex at INFN-LNF in Frascati (Italy) will be presented, in particular the results on the weak π -mesonic decay channel of p-shell Λ -Hypernuclei will be discussed.

The study is related to the spectroscopy of negative pions spectra emitted in the mesonic weak decay of ${}^5_\Lambda\text{He}$, ${}^7_\Lambda\text{Li}$, ${}^9_\Lambda\text{Be}$ and ${}^{11}_\Lambda\text{B}$, following the reaction:



Exploiting both the target thinness and the good transparency of the FINUDA apparatus, pion momenta as low as 80 MeV/c have been analyzed with a dedicated version of the FINUDA reconstruction code, allowing to investigate for the first time the very low momentum region of negative pion spectra, populated through various mesonic decay mechanisms. The spectrum obtained for ${}^7_\Lambda\text{Li}$ is reported in the figure.



Many-body and, when present, also two-body mesonic decay channels have been studied and the relative amplitudes, $\Gamma_{\pi 2\text{body}}$ and $\Gamma_{\pi\text{tot}}$, or branching ratios have been measured and will be presented. Comparison with existing experimental data [2] and theoretical predictions [3] will be showed.

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[3] T. Motoba, K. Itonaga and H. Bando, Nucl. Phys. A 489 (1998) 683.

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