${}^{10}_{\Lambda}$Be AND ${}^{10}_{\Lambda}$B HYPERNUCLEI ON THE NUCLOTRON

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Recently, the Nuclotron accelerator at the Laboratory of High Energy has supplied the first extracted beam of medium energy ions. This opens up possibilities to perform hypernuclear experiments using a specific approach where hypernuclei are produced by the excitation of beam nuclei and decay at a distance of tens of cm downstream the production target. Dedicated detector set up including as the main parts silicon strip vertex detector, Cherenkov detectors and magnetic spectrometer opens possibilities to continue experiments peformed on the Dubna synchrophasotron ion beams [1] and, at the same time, to test a new method of identification some hypernuclei using the $\alpha\alpha$ decay of the ^{8}Be* residual nucleus as a trigger [2]:

$$
\begin{array}{lcll}
{}^{10}_{\Lambda}\mathrm{Be} & \rightarrow & n + n + {}^{8}\mathrm{Be}^{*}; & {}^{8}\mathrm{Be}^{*} \rightarrow \alpha + \alpha, \\
{}^{10}_{\Lambda}\mathrm{B} & \rightarrow & n + p + {}^{8}\mathrm{Be}^{*}; & {}^{8}\mathrm{Be}^{*} \rightarrow \alpha + \alpha.
\end{array}
$$

The objective of the experiment is to extend the data bank of the weak decay observables (τ, Γ^{p} and Γ^{n}) for p-shell hypernuclei [3].

More precise determination of the τ(A) would be helpful to establish clearly when saturation is reached [4].

The measurement of production rates of different species makes possible to verify the models of relativistic ion hypernuclear production and to constrain the parameters entering them [5].

References

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