

Spectroscopic study of hyperon resonance below $\bar{K}N$ threshold via the $d(K^-, n)$ reaction

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We have taken the data of the (K^-, n) reaction on the D_2 target in May, 2015. In this reaction, it is expected that the K^- kicks a neutron and produces the $\Lambda(1405)$ in a backward angle. We identify the final state of $K^-d \rightarrow n\pi^+\pi^-n$ by detecting the forward neutron, π^+ and π^- and obtain the $d(K^-, n)\pi^+\Sigma^{\pm}$ spectrum excluded K^0 and forward-going Σ productions. We observed few hundred events in the region below the $\bar{K}N$ threshold.

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