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Production of $d_{N\Omega}$ dibaryon in kaon induced reactions.

Monday, 16 October 2023 17:00 (20 minutes)

In this work, we propose to investigate the $d_{N\Omega}$ dibaryon production in the process $K^- p \to d_{N\Omega}\bar{\Xi}^0$ by utilizing the kaon beam with the typical momentum to be around 10 GeV, which may be available at COMPASS, OKA@U-70 and SPS@CERN. The cross sections for $K^- p \to d_{N\Omega}\bar{\Xi}^0$ are estimated and in particular, the magnitude of the cross sections are estimated to be $404.38^{+358.45}_{-201.89}$ nb at $P_K = 20$ GeV.
Considering that $d_{N\Omega}$ dominantly decay into $\Xi\Lambda$ and $\Xi\Sigma$,
we also estimate the cross sections for $K^- p \to \Xi^0\Lambda\bar{\Xi}^0$ and $K^- p \to \Xi^-\Sigma^+\bar{\Xi}^0$, where the dibaryon $d_{N\Omega}$ can be observed in the invariant mass distributions of $\Xi^0\Lambda$ and $\Xi^-\Sigma^+$, respectively.

Parallel Session

Hadron Spectroscopy

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