

XVth Quark Confinement and the Hadron Spectrum



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Measurement of Polarization of Ξ^- - Production at $\sqrt{s}=2.15 \text{ GeV}/c^2$

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We present the polarization measurement of the Ξ^- baryon produced in the $^{12}\text{C}(K^-, K^+)\Xi^-$ reaction and in the $p(K^-, K^+)\Xi^-$ reaction at the center-of-mass energy $\sqrt{s} = 2.15 \text{ GeV}/c^2$. We have collected 300k $^{12}\text{C}(K^-, K^+)\Xi^-$ events and reconstructed 30k Ξ^- with a $1.8 \text{ GeV}/c$ K^- beam in J-PARC E42.

The polarization analysis of the ^{12}C dataset will provide informations about the spin state of the Ξ baryon, which is necessary for the spin-state analysis in the search for H-dibaryon production. Using a CH_2 target, we reconstructed approximately 1k Ξ^- in the $p(K^-, K^+)\Xi^-$ reaction. The polarization analysis of this dataset allows us to investigate the spin structure of a forward bump structure observed in the double strangeness reaction.

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