

Abstract Submitted
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Search for Θ^+ via $\pi^-p \rightarrow K^-X$ reaction near production threshold

KOJI MIWA, Kyoto University, KEK-PS E522 COLLABORATION — We have searched for Θ^+ via $\pi^-p \rightarrow K^-X$ reaction using 1.87 and 1.92GeV/c π^- beam at the K2 beamline of KEK-PS 12GeV Proton Synchrotron. We irradiated 2.9×10^9 and 3.0×10^9 π^- beam to the SCIFI and the polyethylene targets respectively at beam momentum 1.87GeV/c. At 1.92GeV/c, 7.4×10^9 π^- beam was irradiated to only polyethylene target. In the missing mass spectrum at beam momentum 1.92GeV/c, a bump was found at $1530 \text{MeV}/c^2$ which is consistent with the mass reported by several experiments. The statistical significance of this bump, however, was only $2.5\text{--}2.7\sigma$ (preliminary). Therefore we derived the upper limit of Θ^+ production cross section via $\pi^-p \rightarrow K^-\Theta^+$ reaction and obtained $4.1\mu\text{b}$ (preliminary) at 90% confidence level assuming that Θ^+ was produced isotropically in the center of mass system.

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