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Theoretical investigation of $\Lambda(1405)$ formation in K^-p reactions comparing to Hemingway data

Saturday, 31 May 2014 15:00 (2:00)

Collaboration

Abstract content

In this work, the differential cross section of $\Lambda(1405)$ formation in $K^-p \to \Sigma^+(1660)$, $\Sigma^+(1660) \to \Lambda(1405)\pi^+$ and finally $\Lambda(1405) \to (\Sigma\pi)^0$ have been calculated theoretically. Calculation and investigation of the invariant mass of this reaction give an opportunity to find out the structure of this resonance state. We use Hemingway experimental data and χ^2 (chi square) fitting method to compare our theoretical calculation to data. Fitting by χ^2 method showed the peak of $\Lambda(1405)$ around M=1405 MeV/c^2 which confirms the deeply bound state of $\bar{K}N$ interaction.

Primary author(s) : HASSANVAND, Maryam (Isfahan University of Technology); AKAISHI, Yoshinori (RIKEN)

Co-author(s) : HASSASFAR, Abbas (Isfahan university of Technology)

Presenter(s) : HASSANVAND, Maryam (Isfahan University of Technology)

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