Theoretical Prediction of Differential Cross Sections for Reaction $pp \to pK^+\Lambda$ in a Resonance Model

LIU Bo-Chao[1,4] and ZOU Bing-Song[1,2,3]

[1] Institute of High Energy Physics, the Chinese Academy of Sciences, P.O. Box 918 (4), Beijing 100049, China

[2] Center of Theoretical Nuclear Physics, National Laboratory of Heavy Ion Accelerator, Lanzhou 730000, China

[3] Institute of Theoretical Physics, the Chinese Academy of Sciences, Beijing 100080, China

[4] Graduate School of the Chinese Academy of Sciences, Beijing 100049, China

Abstract: The reaction of $pp \to pK^+\Lambda$ is a very good channel to study N* resonances through their $K\Lambda$ decay mode, because there is no mixing of isospin I=1/2 and I=3/2 due to isospin conservation. In this work, we extend a resonance model, which can reproduce the total cross section very well, to offer differential cross section information about this reaction. It can serve as a reference to build the scheduled hadron detector at Lanzhou Cooler Storage Ring (CSR). Experiment measurement of these differential cross sections in the future will supply us more constraints on the model and help us understanding the strangeness production dynamics better.

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