

Abstract Submitted
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Determination of Acceptance for the $\pi^- p \rightarrow K\Lambda$ Reaction

DOLAPO SOBOYEDE — ACU fairly recently became involved in an experiment proposed by the Institute for Theoretical and Experimental Physics (ITEP) and the Petersburg Nuclear Physics Institute (PNPI). In this experiment, our aim is to gain a better understanding of the second and third resonance regions in pion-nucleon scattering. In $\pi^- p \rightarrow \pi^- p$ scattering, the P_{11} (1710) resonance is poorly seen, but in the $\pi^- p \rightarrow K\Lambda$ reaction the resonance is more clearly defined. In addition, previous experiments have been insensitive to narrow pion-nucleon resonances, but this experiment will be sensitive to such excited states of bound quarks. This research focuses on a GEANT4 simulation of the experiment and an analysis of the data using ROOT in order to determine the acceptance for the $\pi^- p \rightarrow K\Lambda$ reaction. Our experimental setup is designed to detect only charged particles, thus this research concentrates on charged decay modes.

Dolapo Soboyede
Abilene Christian University

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