Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Determination of Acceptance for the $\pi^- p \rightarrow$ K Lambda Reaction DOLAPO SOBOYEDE, MICHAEL SADLER, Abilene Christian University — 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 simulation concentrates on charged decay modes.

Dolapo Soboyede
Abilene Christian University

Date submitted: 29 Aug 2006 Electronic form version 1.4