

Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

Understanding the $N^*(1710)$ Resonance by Scanning the π^-p System in the (1610-1770) MeV Region TEMITOPE OMIWADE, Abilene Christian University — Abilene Christian University in collaboration with Petersburg Nuclear Physics Institute (PNPI) and Institute for Theoretical and Experimental Physics (ITEP) have been working to improve the pion-nucleon resonance by scanning of the π^-p system invariant mass in the (1610-1770) MeV region with the detection of π^-p and $K\Lambda$ decays. Previous experiments indicate inconsistencies in the $P_{11}(1710)$ resonance in the reaction $\pi^-p \rightarrow \pi^-p$, however, using the reaction $\pi^-p \rightarrow K\Lambda$, the nucleon resonance can be understood better. Using a GEANT4 simulation, we were able to model the particles from the target and retrieve information on these particles from the hodoscope. Using ROOT, a detailed analysis was retrieved from the data to differentiate between the protons and pions at the hodoscope. The goal of my work is to provide criteria for discrimination of proton from pion tracks in the final state using the TOF system.

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Date submitted: 08 Aug 2006

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