Abstract Submitted
for the TSF06 Meeting of
The American Physical Society

Implementation of Vertex Reconstruction in the Search for Resonances in the 1610-1770 MeV Invariant Mass Region EZEKIEL WALKER, Abilene Christian University — In recent years, there has been considerable activity in the realm of baryon spectroscopy. A collaboration between Petersburg Nuclear Physics Institute (PNPI), Institute for Theoretical and Experimental Physics (ITEP), and Abilene Christian University (ACU), is aimed at increasing the understanding of the 1610-1770 MeV invariant mass region. ACU is particularly interested in the N*(1710) resonance, a poorly defined excited state of the nucleon. Utilizing GEANT4 and ROOT, two powerful simulation and analysis programs, ACU is simulating the π^-p -> KΛ reaction to help find the optimum design parameters for the experiment. In order to reconstruct the π^-p -> KΛ events, a vertex reconstruction algorithm was designed, tested, and implemented. An overview of the design process, capabilities, limitations, and current results will be discussed.

Ezekiel Walker
Abilene Christian University

Date submitted: 08 Sep 2006 Electronic form version 1.4