

Abstract Submitted
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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 $\pi^- p \rightarrow K\Lambda$ reaction to help find the optimum design parameters for the experiment. In order to reconstruct the $\pi^- p \rightarrow K\Lambda$ 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

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