Pion-Nucleon Single Charge Exchange at $T_{\pi^-} = 10.6, 20.6, \text{ and } 39.4$ MeV

DONALD ISENHOWER, Abilene Christian University — Measurements will be presented for the differential cross sections for $\pi^- p \rightarrow \pi^0 n$ near $0^\circ, 90^\circ$, and $180^\circ$ at $T_{\pi^-} = 10.6, 20.6, \text{ and } 39.4$ MeV ($P_{\pi^-} = 55.4, 78.6, \text{ and } 112.0$ MeV/c) from LAMPF Experiment 882. These data include the lowest energies ever measured for this interaction and are the only low-energy data to cover the entire angular region from $0^\circ$ to $180^\circ$. The results are compared with the partial wave analyses and potential models. The goal of determination of the differential cross sections to better than 10% has been obtained by these measurements.

$^1$Work supported by the U.S. Department of Energy