Abstract Submitted
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$\vec{\mathbf{n}}$-d Analyzing Power at $\mathbf{E_n}$ = 21.0 and 22.7 MeV JEROMY TOMPKINS, Gordon College, M.W. AHMED, A.S. CROWELL, J.H. ESTERLINE, C.R. HOWELL, W. TORNOW, Duke University and TUNL, B.J. CROWE III, NCCU, R.S. PEDRONI, N.C. A&T University, G.J. WEISEL, PSU Altoona, I. SLAUS, Rudjer Boskovic, H. WITALA, Jagiellonian University — The $\vec{n}-d$ analyzing power $A_y(\theta)$ was measured for E_n = 21.0 MeV and E_n = 22.5 MeV. Polarized deuterons were accelerated using the TUNL FN-Tandem into a ^{2}H gas cell to produce the incident polarized neutrons using the $^2\mathrm{H}(\vec{d},\vec{n})^3\mathrm{He}$ source reaction. We used a deuterated scintillator as the center detector in our $A_y(\theta)$ measurements and a ^{4}He gas cell to determine the beam polarization. $A_y(\theta)$ values were taken at lab angles 39°, 60°, 81°, 94°, 107°, and 128°. This data addresses the long standing discrepancy between rigorous three-nucleon calculations and experimental data (3NAPP) in the unexplored neutron energy range from 19.0 to 30.0 MeV. Our results confirm the 3NAPP. They also show a sensible trend in the maxima and minima between E_n = 19.0 and 30.0 MeV. This suggests that the theoretical treatment of the three-nucleon systems needs revision.

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