

Abstract Submitted
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Refinement of Global Phase-Shift Analysis for $p + {}^3\text{He}$ Elastic Scattering Using Spin-Correlation Coefficients¹ TIM DANIELS, CHARLES ARNOLD, JOHN CESARATTO, THOMAS CLEGG, ALEXANDER COUTURE, ASTRID IMIG, HUGON KARWOWSKI, University of North Carolina at Chapel Hill and Triangle Universities Nuclear Laboratory — As part of an investigation of the $A=4$ system, we measured the spin-correlation coefficients A_{yo} , A_{oy} , A_{yy} , and A_{xx} for $p-{}^3\text{He}$ elastic scattering at E_{lab} of 2.3, 2.7, 4.0, and 5.5 MeV and Θ_{lab} between 30° and 150° . The data were taken using TUNL's atomic beam polarized ion source and our spin-exchange optical pumping polarized ${}^3\text{He}$ target². We aim to resolve ambiguities in the phase shifts of George and Knutson³, which seem most sensitive to A_{xx} and A_{yy} at the lowest of these energies. Our measurements will be shown with phase-shift-analysis solutions, as well as some discussion of systematic effects related to the steering of charged particles by the target's magnetic field.

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²T. Katabuchi *et al.*, Rev. Sci. Instrum. 76, 033503 (2005)

³E.A. George and L.D. Knutson, Phys Rev C 67, 027001 (2003)

Tim Daniels
University of North Carolina at Chapel Hill and
Triangle Universities Nuclear Laboratory

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