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Measurement of $p^{\uparrow}$Au and $p^{\uparrow}d$ Analyzing Power at low momentum transfer $0.002 < -t < 0.020$ (GeV/c)^2 for incident proton energies of 10, 19, 31, and 100 GeV.†

Abstract

The RHIC Run16 included 5 weeks of d-Au Energy Scan. We employed the Polarized Atomic Hydrogen Gas Jet Target (HJET, the absolute polarimeter for RHIC pp program) to measure elastic scattering of polarized protons on deuterium and Gold nuclei at four energies: 10 GeV, 19 GeV, 31 GeV, and 100 GeV. The measurements were performed in parallel with the main RHIC program. Analyzing power, as a function of momentum transfer was measured in the momentum transfer range $0.002 < -t < 0.020$ $(GeV/c)^2$. The results will be compared with similar measurements of proton scattering on p, Au, and Al at 100 GeV obtained in RHIC Run15.

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