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Understanding the Protons Spin at STAR

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A major goal of the proton spin physics program at the Relativistic Heavy Ion Collider (RHIC) is to constrain the gluon polarization distribution $\Delta g(x)$ and thus determine the contribution of gluons to the spin of the proton. Recent global analyses, with major impact from STAR, have demonstrated a positive contribution to the spin of the proton from mid-to-high x gluons (e.g. $x > 0.05$). A variety of measurements at STAR have been recently completed, or are now underway, to better constrain the gluon polarization distribution, particularly at low x . Inclusive jet measurements at mid-rapidity (tracking with $|\eta| < 1.3$) remain a core part of the STAR program while measurements with correlated observables like dijets provide more precise information about the initial-state parton kinematics. Moving to forward pseudorapidities (additional calorimetry with $1.09 < \eta < 2.00$ and $2.65 < \eta < 4.0$) with neutral pions allows us to probe lower partonic momenta, as does moving to higher center-of-mass energy. We will present the status of a variety of asymmetry measurements and the results of others using jet, dijet and neutral pion probes with longitudinally polarized $p + p$ datasets at $\sqrt{s} = 200$ GeV (25 pb^{-1}) and $\sqrt{s} = 510$ GeV (382 pb^{-1}).