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Longitudinal Double Spin Asymmetries of π^0 - Jet Correlations in Polarized Proton Collisions at $\sqrt{s}$ = 510 GeV at STAR

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One of the primary goals of the spin physics program at STAR is to constrain the polarized gluon distribution function, Δg(x), by measuring the longitudinal double-spin asymmetry $(ALL) of various final-state channels. Using a jet in the mid-0.9 correlated with a back-to-back neutral pion in the forward rapidity region $0.8 < \eta < 2.0$ in the STAR End cap provides a new to proton collisions at $\sqrt{s} = 510 GeV$, extracted from 80 pb^{-1} of data taken during the 2012 RHIC run. We also compare to theoretical by next-to-leading order (NLO) model calculations with different polarized parton distribution functions.

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