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Photon-jet Coincidence Measurements in Polarized pp Collisions at 200 GeV at STAR SEEMA DHAMIJA, Indiana University, STAR COLLABORATION — Recent inclusive measurements with polarized proton-proton collisions at RHIC provide significant constraints on the polarized gluon distribution, $\Delta g(x)$, integrated over the gluon momentum range $0.05 < x < 0.2$. Determining the gluon helicity distribution as a function of the parton momentum fraction x requires sensitivity to the initial-state parton kinematics, which can be achieved with correlated probes such as di-jet or photon-jet coincidence measurements. Compared to di-jets, the γ-jet channel is lower in yield, but is dominated by a single partonic subprocess (quark-gluon Compton scattering). Through localized measurement of the photon energy in the forward direction (along with the jet thrust axis of the recoiling jet), more precise reconstruction of the parton kinematics is achievable as is sensitivity to lower values of x. A detailed systematic study of detector effects, and evaluation of γ-jet signal and background contributions in the experimental data, will be presented from the 2006 GeV p+p run.

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