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The Double-Longitudinal Spin Asymmetry in Charged Pion Production at PHENIX: Determining the Sign of Δg CHRISTINE AIDALA, Columbia University, PHENIX COLLABORATION — The Relativistic Heavy Ion Collider (RHIC) began colliding polarized protons in 2001. Early measurements of the double- longitudinal asymmetry (A_{LL}) in the production of neutral pions, sensitive to Δg, the gluon's contribution to the spin of the proton, have been performed by the PHENIX experiment. Because a significant fraction of pion production in the presently accessible kinematic region is due to gluon-gluon scattering, the factorized polarized cross section contains Δg twice, and thus the current measurement is not sensitive to the sign of the gluon contribution. Pion production at higher transverse momentum (p_T) will be dominated instead by quark-gluon scattering. The difference between A_{LL} of positive and negative pions at high p_T will be particularly sensitive to the sign of Δg. The current status of the charged pion A_{LL} analysis using PHENIX data from the 2003 and 2004 polarized proton runs at RHIC will be presented.

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