Double Longitudinal Spin Asymmetries of Inclusive Charged Pion Production in Polarized p+p Collisions at 200 GeV ADAM KO-COLOSKI, Massachusetts Institute of Technology, STAR COLLABORATION — A primary goal of the STAR Spin program at RHIC is the measurement of the polarized gluon distribution function $\Delta G$, which can be obtained from a global analysis incorporating measurements of the double spin asymmetry $A_{LL}$ in various final state channels of polarized p+p collisions. Final states with large production cross sections such as inclusive jet and hadron production are analyzed as the program moves towards the measurement of $A_{LL}$ in the theoretically clean channel of prompt photon production. The channels $p+p \rightarrow \pi^+/-+X$ are unique in that the ordering of the measurements of $A_{LL}$ in these two channels is sensitive to the sign of $\Delta G$. Moreover, STAR has already established the procedure for the identification of charged pions and the calculation of their production cross-sections over a broad kinematic range. This contribution will present first measurements of double longitudinal spin asymmetries for inclusive charged pion production extracted from 3 pb$^{-1}$ of data at $\sqrt{s}=200$ GeV and 50% beam polarizations. The asymmetries are calculated over the transverse momentum region $2<p_T<12$ GeV/c and compared with theoretical predictions incorporating several gluon polarization scenarios. A systematic bias introduced by the selection of charged pions from events satisfying electromagnetic energy triggers will be discussed and estimated using Monte Carlo.

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