

Abstract Submitted
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Cross sections and double helicity asymmetries of mid-rapidity single inclusive non-identified charged hadron production in p+p collisions at $\sqrt{s} = 62.4$ GeV AMARESH DATTA, University of Massachusetts, Amherst, PHENIX COLLABORATION — We investigate hard interaction in QCD through the measurement of cross sections of mid-rapidity production of non-identified charged hadrons from $p + p$ collisions at $\sqrt{s} = 62.4$ GeV. Measurements are made in the transverse momentum range from 0.5 GeV/ c to 4.5 GeV/ c by the PHENIX experiment at RHIC. Predictions based on perturbative QCD calculations at next-to-leading order (NLO) are consistent with the cross section results. The data are also consistent with resummed perturbative QCD calculations, which include terms with next-to-leading log (NLL) accuracy and have correspondingly reduced theoretical uncertainties. The double helicity asymmetry measurements of mid-rapidity non-identified charged hadrons in the measured transverse momentum range are sensitive at leading order to the polarization of gluons in a momentum fraction range $0.05 \leq x_{gluon} \leq 0.2$.

Amaresh Datta
University of Massachusetts, Amherst

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