

Abstract Submitted
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Understanding Hard Interactions in QCD and the Gluon Spin Contribution to the Spin of the Proton 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/ c . Measurements are made in the transverse momentum range from 0.5 GeV/ c to 4.5 GeV/ c by the PHENIX collaboration at RHIC. The cross section results are consistent with predictions based on QCD calculations of next-to-leading order (NLO) accuracy and shows better agreement with next-to-leading log QCD predictions. The double helicity asymmetry measurements of mid-rapidity non-identified charged hadrons in the stipulated transverse momentum range are sensitive at leading order to the polarization of gluons in a momentum fraction range $0.06 \leq x_{gluon} \leq 0.3$.

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