

Abstract for an Invited Paper  
for the HAW09 Meeting of  
The American Physical Society

### **RHIC-Spin: Results and Outlook**

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Contribution of the gluon spin ( $\Delta G$ ) to the proton spin  $1/2$  has been investigated as the first goal of spin physics at RHIC. Polarized proton collision experiments at a collision energy 200 GeV started in 2001. The PHENIX and STAR experiments have investigated the  $\Delta G$  by measuring a longitudinal-spin asymmetries of neutral pion and jet produced in longitudinally polarized proton collisions. Experimental results from data taken in 2006 showed that these asymmetries are very small and they strongly restrict  $\Delta G$  in the theoretical calculations based on perturbative QCD. From 2009, polarized proton collisions at a collision energy 500 GeV started and we investigate flavor-sorted contribution of the quark spin to the proton spin with weak-boson production. The final remaining piece of information to understand the proton spin is orbital-angular momenta of quarks and gluons inside the proton. Correlation between momentum-distribution of quarks and gluons inside the proton and their spin direction in transversely-polarized proton collisions will be investigated to understand the spin structure of the proton including the orbital-angular momentum.