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## Recent STAR results on the W boson program at RHIC at BNL

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The STAR experiment at the Relativistic Heavy-Ion Collider at Brookhaven National Laboratory is carrying out a spin physics program in high-energy polarized proton collisions at  $\sqrt{s} = 200$  GeV and  $\sqrt{s} = 500$  GeV to gain a deeper insight into the spin structure and dynamics of the proton.

The collision of polarized protons at  $\sqrt{s} = 500$  GeV opens a new era of spin-flavor structure measurements from  $W^{-(+)}$  boson production.  $W^{-(+)}$  bosons are produced in  $\bar{u} + d$  ( $\bar{d} + u$ ) collisions and can be detected through their leptonic decays,  $e^- + \bar{\nu}_e$  ( $e^+ + \nu_e$ ), where only the respective charged lepton is measured. The discrimination of  $\bar{u} + d$  ( $\bar{d} + u$ ) quark combinations requires distinguishing between high  $p_T$   $e^{-(+)}$  through their opposite charge sign, which in turn requires precise tracking information. Recent STAR results on the measurement of  $W^-/W^+$  and  $Z$  boson production at mid-rapidity will be shown.

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**Track Classification:** Structure functions and Parton Densities