

# PHENIX Measurement of Parity-Violating Single Spin Asymmetry in W Production in p+p Collisions at 500 GeV

The flavor-separated polarized parton distribution functions for light quarks and anti-quarks in the proton can be studied in the production of W bosons in p+p collisions. The Ws are produced in processes like  $u + \bar{d} \rightarrow W^+$  and  $\bar{u} +$

$d \rightarrow W^-$  and we observe

the lepton (an electron or muon) from the decay channel  $W^+ \rightarrow l^+ \nu$ . The electron energy spectrum from W decays measured with an integrated luminosity of approximately  $10 \text{ pb}^{-1}$  will be shown, with a measurement of the electron single spin asymmetry in central rapidity.

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