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Transverse double-spin asymmetries for electroweak gauge-boson production in high-energy polarized $\vec{p} + \vec{p}$ collisions BERND SURROW, JACQUES SOFFER, Temple University, CLAUDE BOURRELY, Aix Marseille University — The collision of high-energy polarized proton beams at the Relativistic Heavy-Ion Collider at Brookhaven National Laboratory provides a powerful way to gain a deeper insight into the spin structure and dynamics of the proton such as the study of the helicity distributions of gluons and quarks / antiquarks based on well established high-energy QCD and $W$ boson processes, respectively. Several studies have been suggested in the past to gain a better understanding of the transversity distribution, in particular the measurement of the transverse double-spin asymmetries ($A_{TT}$) for Drell-Yan production. Prior NLO calculations for Drell-Yan $\gamma/Z$ exchange have been used to evaluate $A_{TT}$ for $Z$ production using maximal bounds for the transversity distribution. The transverse double-spin asymmetry for $W$ production is expected to be zero. The status of $A_{TT}$ NLO calculations specifically for $\gamma/Z$ exchange will be discussed using maximal bounds of transversity distributions within the framework by Bourrely and Soffer.

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