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Cross section measurements of kinematically reconstructed weak bosons in unpolarized $p + p$ collisions at STAR SALVATORE FAZIO, Brookhaven National Laboratory, STAR COLLABORATION — We present cross sections for the weak bosons measured by the STAR experiment at RHIC in unpolarized proton-proton collisions at $\sqrt{s} = 500(510)$ GeV. The results combine data from 2011, 2012, 2013, corresponding to an integrated luminosity of 360 pb^{-1}. An update including the 2017 data (~ 340 pb^{-1}) will be also discussed. The differential Z^0 cross section, measured as a function of the boson's p_T, provides important constraints on the energy dependence of transverse momentum distributions of partons inside the proton. The W^+/W^- cross-section ratio as a function of the boson's rapidity, is sensitive to the non-pertubative $\bar{d}/\bar{u}$ distribution. The probed x range ($0.1 < x < 0.3$) covered by our data naturally complements the phase space accessed at the LHC, providing critical inputs to global fits.

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