

# Production of Z-boson in parton branching method

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Transverse Momentum Dependent (TMD) parton distributions obtained from the Parton Branching (PB) method are combined with next-to-leading-order (NLO) calculations of Drell-Yan (DY) production. MC@NLO method is used for the hard process calculation and match with the PB TMDs. The predictions of the transverse momentum, rapidity and  $\phi^*$  spectra of Z boson have been computed. The theoretical predictions agree well with measurements at the Large Hadron Collider (LHC) within uncertainties. In particular, we study the region of lowest transverse momenta at the LHC, and comment on its sensitivity to nonperturbative TMD contributions.

**Primary author:** WANG, QUN (DESY - PKU)

**Presenter:** WANG, QUN (DESY - PKU)

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