

Electroweak input parameter schemes and precise theoretical predictions for Drell-Yan

Thursday 18 July 2024 09:45 (15 minutes)

At hadron colliders, charged and neutral Drell-Yan processes can be used for a high precision determination of the W -boson mass and the weak mixing angle through template fits. Since these measurements rely on Monte Carlo templates, it is crucial to have both flexible and accurate event generators.

In this contribution, we present the latest updates of the Z_{ew} -BMNNPV package for the simulation of the neutral-current Drell-Yan process at NLO QCD plus NLO EW accuracy with exact matching to QCD and QED parton shower in the POWHEG-BOX framework, ranging from the development of new electroweak input parameter/renormalization schemes, like the \overline{MS} one useful for the measurement of the \overline{MS} running of the weak mixing angle, to the implementation of higher-order fermionic corrections. We perform a detailed comparison of the predictions obtained in the different input parameter/renormalization schemes, discussing their main features and the related theory uncertainties.

Alternate track

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Session Classification: Top Quark and Electroweak Physics

Track Classification: 04. Top Quark and Electroweak Physics