

LHC differential top-quark pair production cross sections in the ABMP16 PDF fit

Thursday 18 July 2024 11:39 (18 minutes)

We investigate the impact of recent LHC measurements of differential top-quark pair production cross sections on the proton parton distribution functions (PDFs) using the ABMP16 methodology. The theoretical predictions are computed at NNLO QCD using the state-of-the-art MATRIX framework. The top-quark mass and strong coupling constants are free parameters of the fit, and we pay particular attention to the values of these parameters and their correlation as obtained from variants of the fit using different input data sets. We discuss the compatibility of different datasets and the compatibility of the fitted PDFs with those extracted from other datasets in the global ABMP16 fit, as well as with other modern global PDF sets. In addition, we compare the fit results with those obtained using the open-source xFitter framework.

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Session Classification: Top Quark and Electroweak Physics

Track Classification: 04. Top Quark and Electroweak Physics