Erratum: Constraining parton distribution functions from neutral current Drell-Yan measurements [Phys. Rev. D 98, 013003 (2018)]

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The following changes should be noted:

(1) Page 4, end of Sec. II: "$M_{ll} < 200$ GeV" should be "$M_{ll} < 170$ GeV".

(2) Page 6: "for $M_{ll} < 1200$ GeV in the CT14NNLO case and for $M_{ll} < 1150$ GeV in the NNPDF3.1 case." should be "for $M_{ll} < 1150$ GeV in both the CT14NNLO and NNPDF3.1 cases."

(3) Page 6: "this is true for roughly $M_{ll} < 400$ GeV" should be "this is true for roughly $M_{ll} < 370$ GeV".

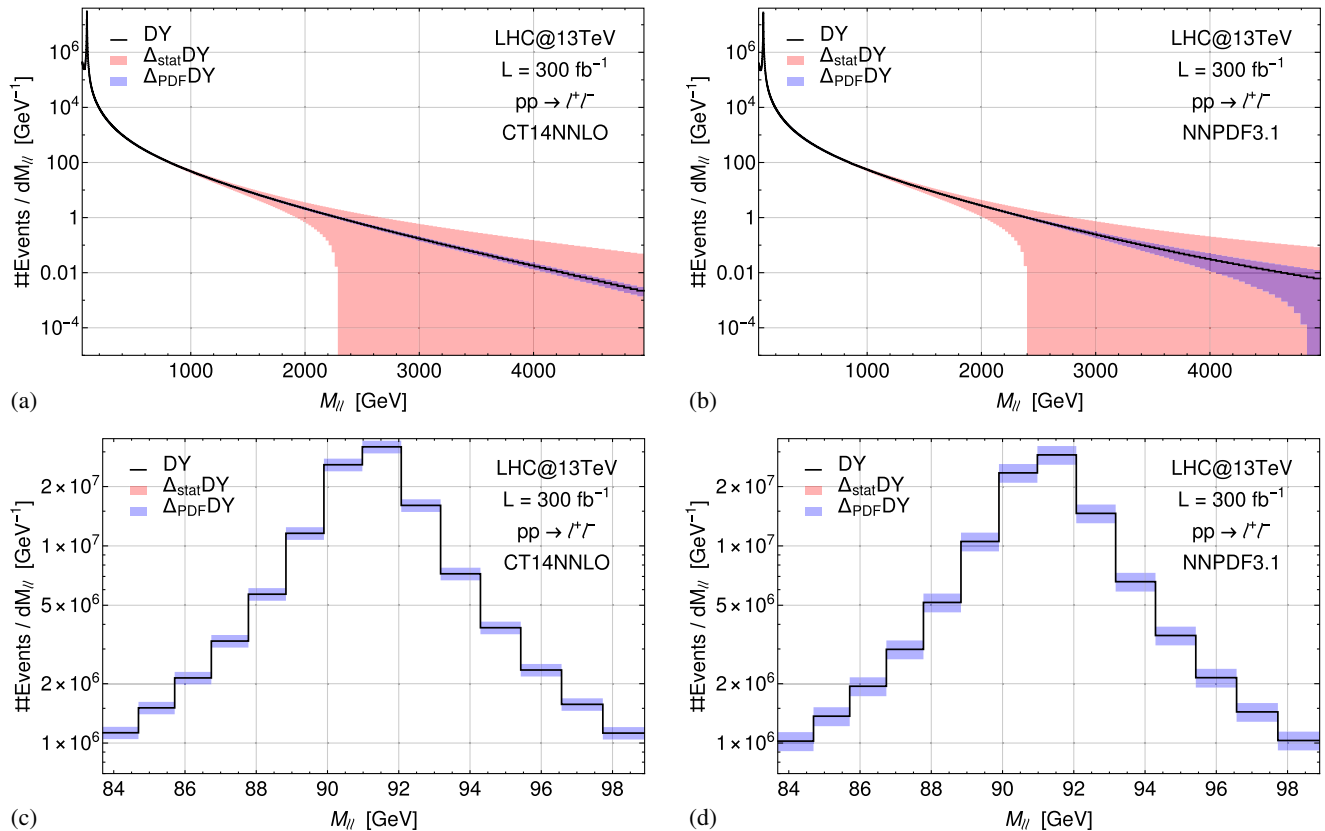Furthermore, Figs. 1–5 are updated as follows:

FIG. 1. (a) Expected number of events in the dilepton invariant mass region and their statistical and PDF error obtained with CT14NNLO. (b) Same as (a) obtained with NNPDF3.1. (c) Zoom of (a) around the Z-boson peak. (d) Zoom of (b) around the Z-boson peak.
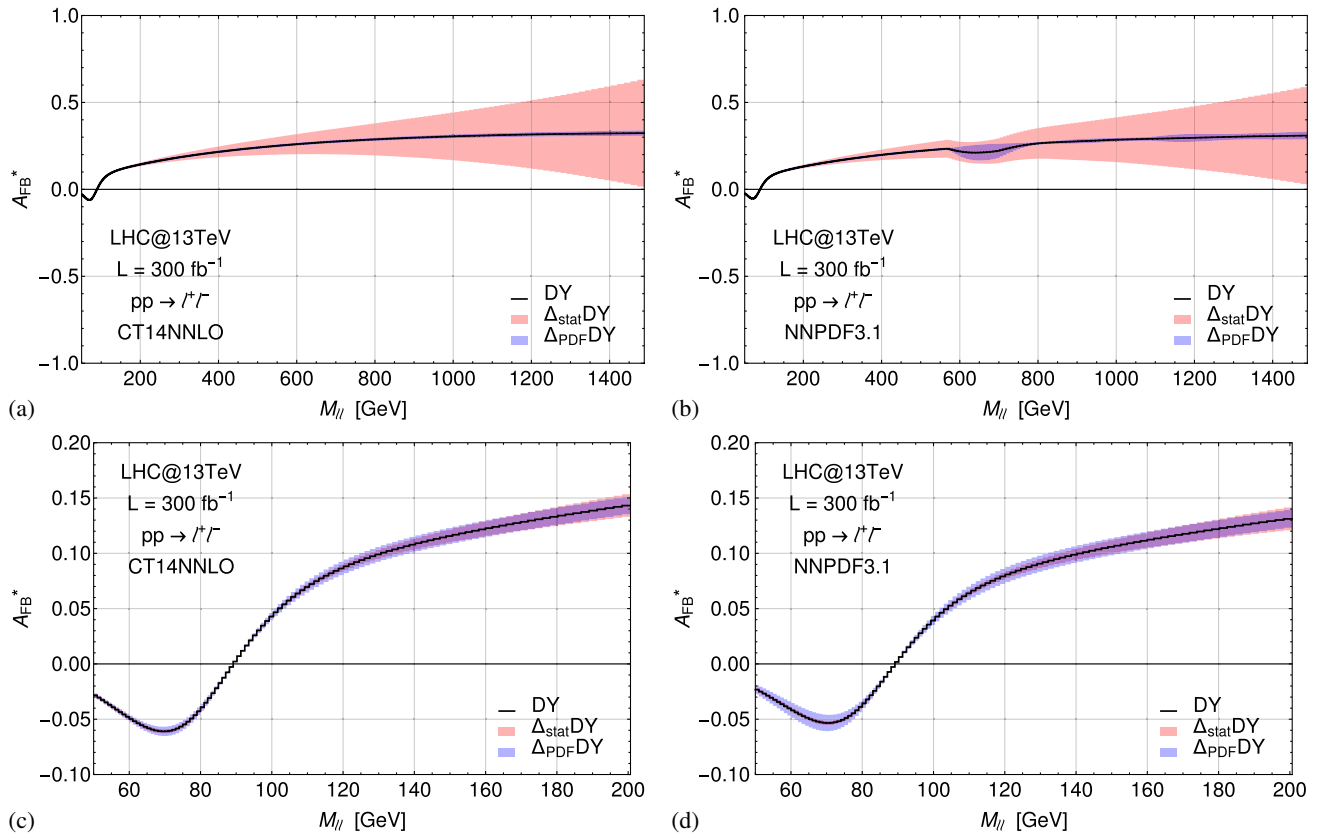
FIG. 2. (a) A_{FB}^* distribution in the dilepton invariant mass including the statistical and PDF errors obtained with CT14NNLO. (b) Same as (a) for the NNPDF3.1 PDF set. (c) Zoom of (a) around the Z-boson peak. (d) Zoom of (b) around the Z-boson peak.
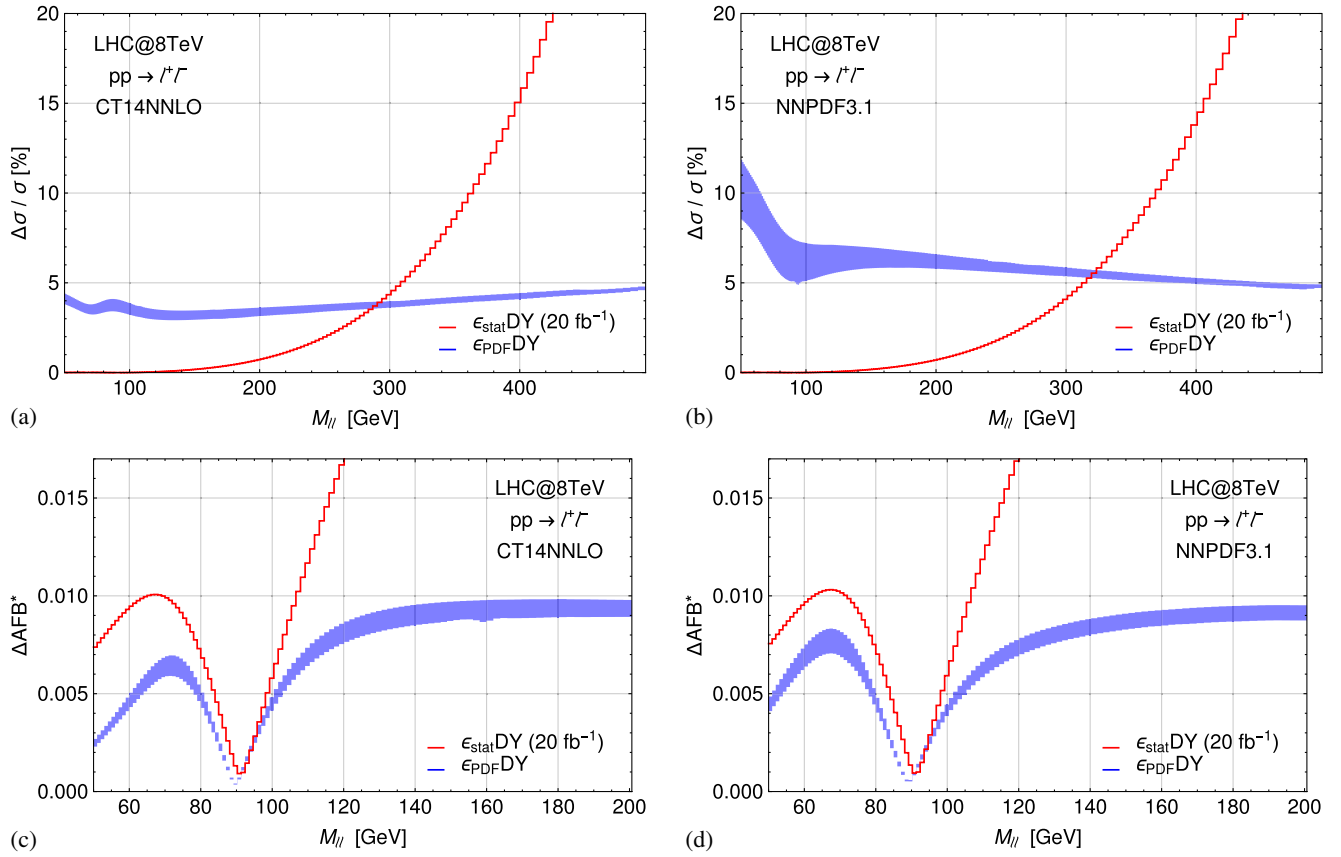
FIG. 3.   (a) Relative errors on the differential cross section at the LHC Run-I with $\sqrt{s} = 8$ TeV and $L = 20$ fb^{-1}, computed with the CT14NNLO PDF set. The red curve represents the statistical error. The blue band has been obtained evaluating the PDF error fixing the factorization/renormalization scale in the interval: $0.5 M_{\ell\ell} < Q < 2 M_{\ell\ell}$. (b) Same as (a) for the NNPDF3.1 PDF set. (c) Absolute errors on the reconstructed FB asymmetry at the LHC Run-I, computed with the CT14NNLO PDF set. The red curve represents the statistical error. The blue band refers to the PDF uncertainty. (d) Same as (c) for the NNPDF3.1 PDF set.
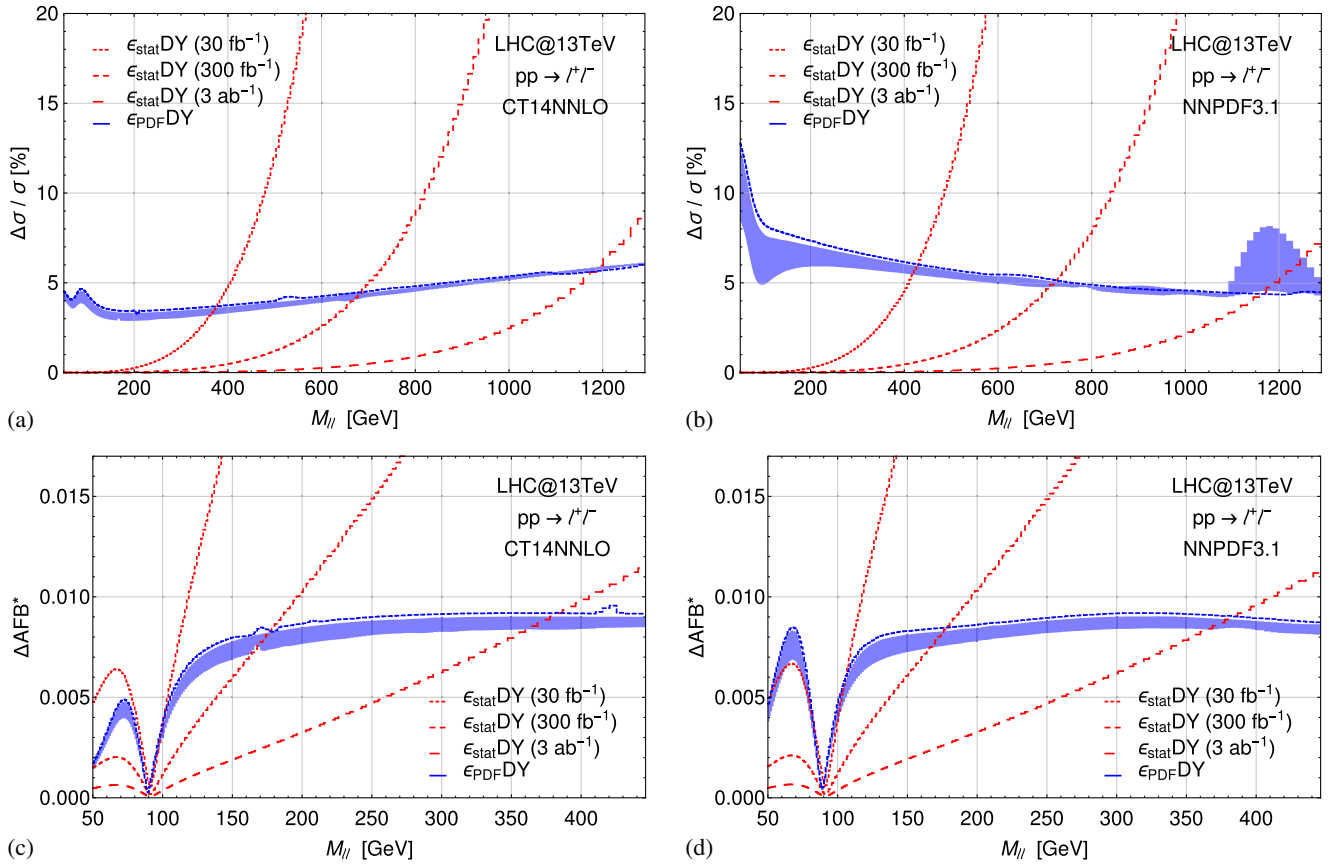
FIG. 4. (a) Relative size of statistical error and PDF uncertainty on the differential cross section obtained with the CT14NNLO set at the 13 TeV LHC. The statistical error is displayed for three different values of the luminosity (see legend). The PDF error band has been obtained evaluating the PDF error fixing the factorization/renormalization scale in the interval: $0.5M_{\ell\ell} < Q < 2M_{\ell\ell}$, while the dashed blue lines represent the PDF uncertainty obtained fixing $\mu_F = \mu_R = p_T$, with p_T the transverse momentum of either lepton in the final state. (b) Same as plot (a) for the NNPDF3.1 PDF set. (c) Absolute value of statistical and PDF uncertainties on the reconstructed A_{FB}^* distribution obtained with CT14NNLO. The statistical error is obtained with the integrated luminosities of 30 fb^{-1}, 300 fb^{-1} and 3 ab^{-1}. The PDF error bands and lines follow the conventions of plots (a) and (b). (d) Same as (c) for the NNPDF3.1 PDF set.
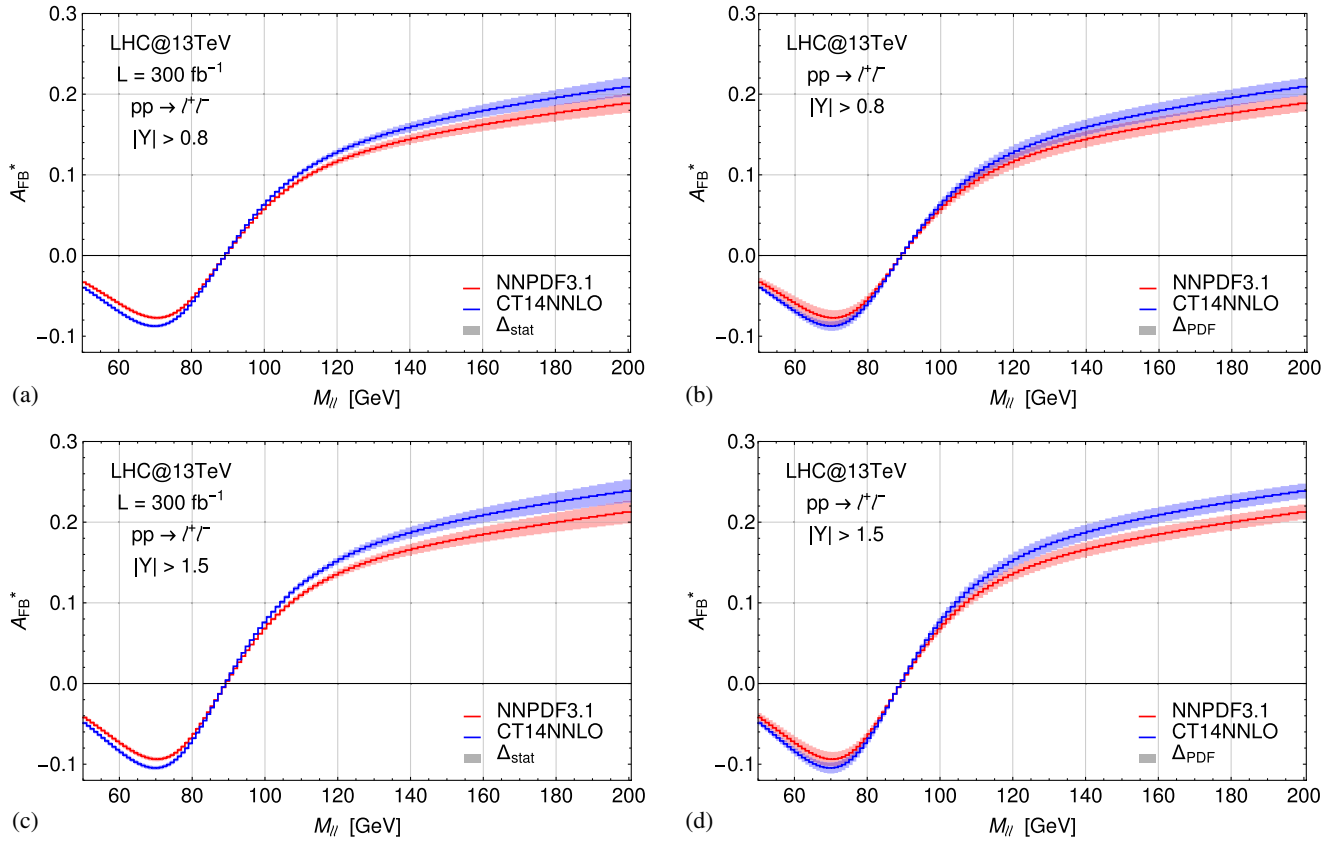
FIG. 5.   (a) A_{FB}^* distribution in the invariant mass region around the Z peak at the LHC Run-II with $L = 300$ fb^{-1}, computed with the CT14NNLO and the NNPDF3.1 PDF sets. The dilepton rapidity cut $|Y_{\ell\ell}| > 0.8$ is imposed. The uncertainty band represents the statistical error. (b) Same as (a) with the PDF error band. (c) Same as (a) for the dilepton rapidity cut $|Y_{\ell\ell}| > 1.5$. (d) Same as (b) for the dilepton rapidity cut $|Y_{\ell\ell}| > 1.5$.