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Measurement of the muon charge asymmetry in inclusive W production at $\sqrt{s}=7$ TeV with the CMS experiment at the LHC

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Measurements of the muon charge asymmetry in inclusive pp to $W+X$ production at $\sqrt{s}=7$ TeV are presented. The data sample corresponds to an integrated luminosity of 4.7 inverse femtobarns recorded with the CMS detector at the LHC. With a sample of more than twenty million W to $\mu\nu$ events, the statistical precision is greatly improved in comparison to previous measurements. These new results provide additional constraints on the parton distribution functions of the proton in the range of the Bjorken scaling variable x from $10E-3$ to $10E-1$.

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