

Gluon PDF relative uncertainty


CMS NNLO

MC Method

$$\mu_F^2 = 10^5 \text{ GeV}^2$$

 HERA DIS + CMS  $W^\pm$

 HERA DIS + CMS  $W^\pm + \sigma_{t\bar{t}}$

  $\text{DIS} + W^\pm + \sigma_{t\bar{t}} / \text{DIS} + W^\pm$

1.2

1

0.8

$10^{-3}$

$10^{-2}$

$10^{-1}$

**x**

