

Z+Jet

Rivet 3.1.10, $\geq 2.7\text{M}$ events

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

pTD2

 $\mathbf{d}^N$

4

Ratio to CMS

Top Panel: $\frac{1}{\frac{dN}{dp_T d\lambda_0^2}}$ vs p_{TD2} . The plot shows the ratio of the differential cross-section to the CMS data for the production of a top quark and a D meson. The x-axis is p_{TD2} (ranging from 0 to 1) and the y-axis is $\frac{1}{\frac{dN}{dp_T d\lambda_0^2}}$ (ranging from 0.1 to 10). The plot includes data points for CMS (black squares), Pythia 8.308 default (blue triangles), Pythia 8.308 tune-4c (red stars), and Pythia 8.308 tune-4cx (orange squares). The ratio is approximately 1 for $p_{TD2} < 0.1$, peaks at $p_{TD2} \approx 0.15$ with a value of about 3, and then decreases towards 1 for $p_{TD2} > 0.5$.

Bottom Panel: Ratio to CMS vs p_{TD2} . The plot shows the ratio of the differential cross-section to the CMS data for the production of a top quark and a D meson. The x-axis is p_{TD2} (ranging from 0 to 1) and the y-axis is the Ratio to CMS (ranging from 0.5 to 1.5). The ratio is approximately 1 for $p_{TD2} < 0.1$, peaks at $p_{TD2} \approx 0.15$ with a value of about 1.2, and then decreases towards 1 for $p_{TD2} > 0.5$. A green shaded band represents the ratio to CMS, and a horizontal line is drawn at Ratio to CMS = 1.