

Jets

Rivet 3.1.10, $\geq 2.5\text{M}$ events

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

pTD2

The figure displays the distribution of p_{TD2} and the ratio of different Pythia 8.308 tunes to the CMS data.

Top Panel: The y-axis represents the differential event rate $\frac{dN}{dp_{TD2}}$ on a logarithmic scale from 1000 to 10000. The x-axis represents p_{TD2} on a linear scale from 0 to 1. The plot shows the distribution for CMS data (black squares) and four Pythia 8.308 tunes: default (blue triangles), tune-1 (yellow inverted triangles), tune-2c (orange circles), and tune-2m (orange open circles). The Pythia tunes show a sharp peak around $p_{TD2} \approx 0.1$, while the CMS data is much flatter. The text "(p_T^D)² λ₀² (CMS jet substructure)" is present in the top right.

Bottom Panel: The y-axis represents the "Ratio to CMS" on a linear scale from 0.5 to 2. The x-axis represents p_{TD2} on a linear scale from 0 to 1. The plot shows the ratio of the four Pythia tunes to the CMS data. A horizontal line is drawn at a ratio of 1.0. The ratios for the Pythia tunes are generally higher than 1.0, especially at low p_{TD2} , and are shown with a yellow shaded band.

Legend:

- CMS
- ▲ Pythia 8.308 default
- ▼ Pythia 8.308 tune-1
- Pythia 8.308 tune-2c
- Pythia 8.308 tune-2m

Text in plot: CMS_2021_I1920187