

Jets

Rivet 3.1.10, $\geq 200k$ events

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

pTD2

The figure displays the distribution of the observable $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure) for CMS data and two Pythia 8.170 models. The x-axis represents the observable value, ranging from 0 to 1. The y-axis represents the distribution, with a logarithmic scale for the top panel and a linear scale for the bottom panel.

The top panel shows the distribution for three models:

- CMS** (Black squares): Experimental data points.
- Pythia 8.170 default** (Blue line with triangles): Default model.
- Pythia 8.170 tune-4cx** (Orange dashed line with squares): Tune-4cx model.

The bottom panel shows the **Ratio to CMS** for the two models, with a green band indicating the ratio is close to 1. The ratio is defined as $\text{Ratio to CMS} = \frac{\text{Model Distribution}}{\text{CMS Data}}$.

Key features of the plot include:

- A peak in the distribution around $(p_T^D)^2 \lambda_0^2 \approx 0.1$.
- The Pythia 8.170 models show a slightly higher peak than the CMS data.
- The ratio to CMS is generally close to 1, indicating good agreement between the models and the data.