

Jets

Rivet 3.1.10, $\geq 300k$ events

mcplots.cern.ch [arXiv:1306.3436]

2

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 various Pythia models. The x-axis represents the observable value, ranging from 0 to 1. The y-axis for the top panel represents the distribution $\frac{dN}{d \ln(p_T^D)^2 \lambda_0^2}$ on a logarithmic scale, ranging from 1000 to 10000. The bottom panel shows the ratio of the Pythia models to the CMS data, with a green shaded band indicating the ratio range.

Legend:

- CMS
- Pythia 6.428 345
- Pythia 6.428 346
- △- Pythia 6.428 370
- Pythia 6.428 default
- ▲- Pythia 8.170 default

Top Panel: The distribution $\frac{dN}{d \ln(p_T^D)^2 \lambda_0^2}$ is shown for CMS data (black squares) and the Pythia models. The CMS data shows a sharp peak around $(p_T^D)^2 \lambda_0^2 \approx 0.1$. The Pythia models show a broader distribution with a peak around $(p_T^D)^2 \lambda_0^2 \approx 0.1$. The Pythia 8.170 default model (blue triangles) shows the highest peak, while the Pythia 6.428 345 model (red dashed line with circles) shows the lowest peak.

Bottom Panel: The ratio of the Pythia models to the CMS data is shown. The ratio is generally close to 1, with a green shaded band indicating the ratio range. The ratio is slightly higher for the Pythia 8.170 default model and slightly lower for the Pythia 6.428 345 model.

Text in Plot:

- $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure)
- CMS_2021_I1920187
- mcplots.cern.ch [arXiv:1306.3436]
- Rivet 3.1.10, $\geq 300k$ events