

Jets

Rivet 3.1.10, $\geq 2.8\text{M}$ events

mcplots.cern.ch [arXiv:1306.3436]

2

0.5

pTD2

The figure displays two panels comparing CMS data with Pythia 6.428 models for the observable $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure).

Top Panel: Shows the distribution $\frac{1}{N} \frac{dN}{dp_{TD2}}$ versus p_{TD2} . The x-axis ranges from 0 to 1. The y-axis ranges from 0 to 10000. The data points (black squares) show a sharp peak around $p_{TD2} \approx 0.1$. The Pythia 6.428 370 model (red triangles) and the Pythia 6.428 default model (orange squares) both show a peak around $p_{TD2} \approx 0.1$, but the default model is slightly higher than the 370 model. The CMS data points are significantly lower than the model predictions in the peak region.

Bottom Panel: Shows the ratio of the Pythia 6.428 models to the CMS data, Ratio to CMS , versus p_{TD2} . The x-axis ranges from 0 to 1. The y-axis ranges from 0.5 to 1.5. The ratio is mostly between 0.7 and 1.3, indicating that the models are generally within a factor of 1.3 of the CMS data. The ratio is highest around $p_{TD2} \approx 0.1$ and decreases towards $p_{TD2} \approx 1$.

Legend:

- CMS
- △ Pythia 6.428 370
- Pythia 6.428 default

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, ≥ 2.8 M events