

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 related to the observable $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure).

Top Panel: Shows the distribution of the observable. The x-axis is $(p_T^D)^2 \lambda_0^2$ (ranging from 0 to 1). The y-axis is $\frac{1}{N} \frac{dN}{dp_T^D}$ (ranging from 0 to 1000). The data points (black squares) show a sharp peak around 0.1. The Herwig 7.2.1 softTune model (blue triangles) and the Pythia 6.428 370 model (red triangles) show a much higher peak around 0.1, reaching approximately 1000.

Bottom Panel: Shows the ratio of the model distributions to the CMS data. The x-axis is p_{TD2} (ranging from 0 to 1). The y-axis is the Ratio to CMS (ranging from 0.5 to 2). The Herwig model (blue) shows a ratio significantly higher than 1 (around 1.5) in the peak region, while the Pythia model (red) shows a ratio closer to 1.

Legend:

- CMS
- ▼ Herwig 7.2.1 softTune
- △ Pythia 6.428 370

Source: CMS_2021_I1920187

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