

Jets

The figure displays the multiplicity distribution of jets in CMS data and various Pythia models. The top panel shows the normalized multiplicity distribution, and the bottom panel shows the ratio of the models to the CMS data.

Top Panel: Multiplicity λ_0 (CMS jet substructure)

The y-axis represents the normalized multiplicity distribution, $\frac{1}{N} \frac{dN}{d\lambda_0}$, ranging from 0 to 120. The x-axis represents the multiplicity, ranging from 0 to 150. The legend indicates the following models and their corresponding markers and line styles:

- CMS: Black squares
- Pythia 6.428 355: Orange dashed line with stars
- Pythia 6.428 356: Green dotted line with squares
- Pythia 6.428 370: Red solid line with triangles
- Pythia 6.428 379: Green dashed line with stars
- Pythia 6.428 ambt1: Orange solid line with triangles
- Pythia 6.428 z2: Green solid line with circles

The CMS data points are shown as black squares, and the Pythia models are shown as lines with markers. The distribution peaks around a multiplicity of 30-40.

Bottom Panel: Ratio to CMS

The y-axis represents the ratio of the models to the CMS data, ranging from 0.5 to 2. The x-axis represents the multiplicity, ranging from 0 to 150. The histogram shows the ratio of the models to the CMS data, with a horizontal line at 1.0. The histogram is colored green and yellow, indicating the ratio of the models to the CMS data.

The histogram shows that the ratio of the models to the CMS data is generally higher than 1.0, indicating that the models predict a higher multiplicity than the CMS data. The ratio is highest for the Pythia 6.428 379 model, which is shown in green.

mcplots.cern.ch [arXiv:1306.3436] Rivet 3.1.10, ≥ 2.4 M events

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