

The figure displays the thrust distribution of dijet events in the central region, comparing experimental data from CMS with various Monte Carlo models.

Top Panel: The y-axis represents the differential event rate $\frac{1}{dN/dp_T d\lambda}$ on a logarithmic scale from 10^{-2} to 10^2 . The x-axis represents the thrust variable λ from 0 to 1. The CMS data (black squares) is compared with several Pythia 6.427 models: Pythia 6.427 359 (cyan dashed line with squares), Pythia 6.427 370 (red solid line with triangles), Pythia 6.427 a (green solid line with triangles), Pythia 6.427 dw (green dashed line with inverted triangles), Pythia 6.427 p0 (black solid line with circles), and Pythia 6.427 pro-q2o (green dotted line with stars). The models generally follow the trend of the data, with some variations in the low-thrust region.

Bottom Panel: The y-axis represents the ratio of the event rate to the CMS data, Ratio to CMS , on a linear scale from 0.5 to 2. The x-axis represents the thrust variable λ from 0 to 1. This panel shows the relative performance of the models compared to the CMS data. A yellow shaded band indicates the ratio range from approximately 0.8 to 1.2. The models show varying degrees of agreement with the data, with some models (like Pythia 6.427 pro-q2o) showing a slight overestimation at low thrust and others (like Pythia 6.427 a) showing a slight underestimation at high thrust.

Legend:

- CMS
- Pythia 6.427 359
- △— Pythia 6.427 370
- ▲— Pythia 6.427 a
- ▼— Pythia 6.427 dw
- Pythia 6.427 p0
- ☆— Pythia 6.427 pro-q2o

Text: (CMS_2021_I1920187)

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Rivet 4.1.0, $\geq 100k$ events ✓

mcplots.cern.ch [arXiv:2401.10621]

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1

0.5

thrust