

# Jets

The figure displays the distribution of groomed  $p_{TD2}$  for CMS data and several Pythia models. The top panel shows the distribution of groomed  $p_{TD2}$  for CMS (black squares) and several Pythia models (colored lines with markers). The bottom panel shows the ratio of these distributions to the CMS distribution, with a green band indicating the ratio is within 10% of 1.0.

**Top Panel: Groomed  $p_{TD2}$  Distribution**

The x-axis is labeled "groomed  $p_{TD2}$ " and ranges from 0 to 1. The y-axis is labeled "1/N dN/dp<sub>TD2</sub>" and ranges from 0 to 1000. The legend indicates the following models:

- CMS (Black squares)
- Pythia 6.428 345 (Red dashed line with open circles)
- Pythia 6.428 346 (Yellow dotted line with open squares)
- Pythia 6.428 370 (Red solid line with open triangles)
- Pythia 6.428 default (Orange dashed line with open squares)
- Pythia 8.308 default (Blue solid line with filled triangles)

The CMS data shows a sharp peak around 0.15. The Pythia models show a broader distribution with a peak around 0.15. The Pythia 8.308 default model shows the highest peak, reaching approximately 1000.

**Bottom Panel: Ratio to CMS**

The x-axis is labeled "groomed  $p_{TD2}$ " and ranges from 0 to 1. The y-axis is labeled "Ratio to CMS" and ranges from 0.5 to 2. The plot shows the ratio of the Pythia models to the CMS distribution. A horizontal line at 1.0 indicates the ratio is 1.0. The green band represents the ratio being within 10% of 1.0.

Rivet 3.1.10,  $\geq 2.4\text{M}$  events

mcplots.cern.ch [arXiv:1306.3436]

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