

Z+Jet

The figure displays the groomed p_{TD2} distribution for CMS data and two Monte Carlo models: Herwig 7.2.1 default and Pythia 8.308 default. The top panel shows the distribution $\frac{1}{N} \frac{dN}{d \ln(p_{TD2})}$ versus groomed p_{TD2} . The bottom panel shows the ratio of the Monte Carlo distributions to the CMS data.

Top Panel: Groomed p_{TD2} Distribution

- Y-axis:** $\frac{1}{N} \frac{dN}{d \ln(p_{TD2})}$ (ranging from 0 to 1000)
- X-axis:** groomed p_{TD2} (ranging from 0 to 1)
- Legend:**
 - CMS
 - Herwig 7.2.1 default
 - ▲-- Pythia 8.308 default

Bottom Panel: Ratio to CMS

- Y-axis:** Ratio to CMS (ranging from 0.5 to 2.0)
- X-axis:** groomed p_{TD2} (ranging from 0 to 1)
- Legend:**
 - Herwig 7.2.1 default
 - Pythia 8.308 default

The CMS data (black squares) shows a sharp peak at low groomed p_{TD2} values. The Herwig 7.2.1 default (green dashed line) and Pythia 8.308 default (blue solid line) models show a broader distribution with a peak around 0.15. The ratio to CMS for Herwig (green) is mostly between 0.8 and 1.2, while for Pythia (yellow) it is mostly between 1.0 and 1.2.

Rivet 3.1.10, $\geq 2.2\text{M}$ events

mcplots.cern.ch [arXiv:1306.3436]

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0.

groomed pTD2