

Jets

Rivet 3.1.10, $\geq 2.7\text{M}$ events

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

pTD2

 $\mathbf{d}^N$

4

Ratio to CMS

The figure displays two panels related to the distribution of p_{TD2} and its ratio to CMS data.

Top Panel: Shows the distribution of p_{TD2} (x-axis, ranging from 0 to 1) for CMS data (black squares) and three Herwig++ models: Herwig++ 2.7.1 default (orange dashed line with circles), Herwig++ 2.7.1 UE-EE-5 (red solid line), and Herwig 7.2.1 default (green dashed line with squares). The y-axis represents the distribution, with a secondary scale for $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure) ranging from 0 to 1000. The CMS data shows a sharp peak around $p_{TD2} \approx 0.1$. The Herwig++ models show a broader distribution, with the 7.2.1 default model peaking around $p_{TD2} \approx 0.1$ and the 2.7.1 UE-EE-5 model peaking around $p_{TD2} \approx 0.15$.

Bottom Panel: Shows the ratio of the Herwig++ models to the CMS data (y-axis, ranging from 0.5 to 2.0). The ratio is plotted for the same p_{TD2} values. The ratio is generally close to 1, indicating good agreement between the models and the CMS data. The ratio is slightly higher for the 7.2.1 default model and slightly lower for the 2.7.1 UE-EE-5 model at low p_{TD2} values.

CMS

Herwig++ 2.7.1 default

Herwig++ 2.7.1 UE-EE-5

Herwig 7.2.1 default

CMS_2021_I1920187