

Z+Jet

Rivet 3.1.10, 400k events

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

pTD2

The figure displays two panels comparing CMS data (black squares) and Pythia 8.170 default simulation (blue triangles) for the observable $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure).

Top Panel: The y-axis represents the differential event rate $\frac{dN}{dp_T^D d\lambda_0^2}$ on a logarithmic scale from 1000 to 10000. The x-axis is $pTD2$ from 0 to 1.0. The CMS data points are shown as black squares, and the Pythia 8.170 default simulation is shown as a blue line with triangles. The simulation shows a peak around $pTD2 \approx 0.15$.

Bottom Panel: The y-axis represents the ratio of the simulation to the CMS data, ranging from 0.5 to 2.0. The x-axis is $pTD2$ from 0 to 1.0. The ratio is shown as a green band, indicating the simulation is generally consistent with the data, with a slight overestimation at low $pTD2$.

Source: CMS_2021_11920187, mcplots.cern.ch [arXiv:1306.3436], Rivet 3.1.10, 400k events.