

Jets

The figure consists of two panels. The top panel is a plot of the multiplicity distribution λ_0 (CMS jet substructure) for $\sqrt{s} = 13.6$ TeV pp collisions. The x-axis represents multiplicity, ranging from 0 to 100. The y-axis represents the distribution $\frac{1}{N} \frac{dN}{d\lambda_0}$, ranging from -20 to 180. The plot compares CMS data (black squares) with two Pythia 8.170 models: the default model (blue triangles) and the tune-4cx model (orange squares). The CMS data shows a sharp peak at multiplicity 0, while the Pythia models show a broader distribution peaking around multiplicity 30. The bottom panel shows the ratio of the Pythia 8.170 default model to the CMS data, with a green shaded region indicating the ratio and a blue line showing the ratio of the Pythia 8.170 tune-4cx model to the CMS data. The x-axis is multiplicity (0 to 100) and the y-axis is the ratio to CMS (0.5 to 2.0). The green shaded region is bounded by a blue line that starts at a ratio of approximately 1.2 at multiplicity 0 and decreases to approximately 0.5 at multiplicity 100.

CMS_2021_I1920187

Rivet 3.1.10, $\geq 400k$ events

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

100