

Jets

Figure 1 consists of two panels. The top panel is a line plot showing the multiplicity distribution $\frac{1}{N} \frac{dN}{d\lambda_0}$ versus multiplicity λ_0 (ranging from 0 to 100). The y-axis ranges from 0 to 120. The plot compares CMS data (black squares) with four Pythia models: Pythia 6.428 370 (red line with open triangles), Pythia 6.428 391 (black dashed line with open squares), Pythia 6.428 default (orange dash-dotted line with open squares), and Pythia 8.205 default (blue solid line with solid triangles). The CMS data shows a sharp peak at $\lambda_0 = 0$ and a smaller peak around $\lambda_0 = 20$. The Pythia models show a broader distribution with peaks around $\lambda_0 = 20$ and $\lambda_0 = 40$. The bottom panel is a stacked histogram showing the ratio of the multiplicity distribution to the CMS distribution, $\frac{1}{N} \frac{dN}{d\lambda_0} / \left(\frac{1}{N} \frac{dN}{d\lambda_0} \right)_{\text{CMS}}$, versus multiplicity λ_0 (ranging from 0 to 100). The y-axis ranges from 0.5 to 2.5. The histogram is colored green for values above 1.0 and yellow for values below 1.0. The ratio is mostly above 1.0 for $\lambda_0 > 40$ and below 1.0 for $\lambda_0 < 40$.

CMS_2021_I1920187

Rivet 3.1.10, $\geq 400k$ events

mcplots.cern.ch [arXiv:1306.3436]

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