

The figure displays the groomed multiplicity distribution for CMS data and several Monte Carlo models. The top panel shows the distribution $\frac{1}{\sqrt{s}} \frac{dN}{d\lambda} \frac{d\lambda}{dp_T}$ on a logarithmic scale versus groomed multiplicity. The bottom panel shows the ratio of the distribution to the CMS data on a linear scale versus groomed multiplicity.

Top Panel: Groomed Multiplicity Distribution

Y-axis: $\frac{1}{\sqrt{s}} \frac{dN}{d\lambda} \frac{d\lambda}{dp_T}$ (log scale, ranging from 10^{-5} to 10^0)

X-axis: groomed multiplicity (ranging from 0 to 80)

Legend:

- CMS
- +— Epos 1.99.crmc.1.6.0 lhc
- - □ - - Herwig 7.2.1 default
- - △ - - Pythia 6.428 370
- - ▲ - - Pythia 8.315 default
- ... ♦ ... Sherpa 2.2.9 default

Bottom Panel: Ratio to CMS

Y-axis: Ratio to CMS (linear scale, ranging from 0.5 to 2.5)

X-axis: groomed multiplicity (ranging from 0 to 80)

Legend:

- CMS
- +— Epos 1.99.crmc.1.6.0 lhc
- - □ - - Herwig 7.2.1 default
- - △ - - Pythia 6.428 370
- - ▲ - - Pythia 8.315 default
- ... ♦ ... Sherpa 2.2.9 default

Shaded regions in the bottom panel indicate the ratio of the distribution to the CMS data for different models:

- Yellow shaded region: Ratio to CMS (ranging from approximately 0.8 to 1.2)
- Green shaded region: Ratio to CMS (ranging from approximately 0.5 to 2.5)

Text in the plot: (CMS_2021_I1920187)