

The figure displays the multiplicity distribution of jets in the forward region, comparing experimental data from CMS with various Monte Carlo models.

Top Panel: The y-axis represents the differential multiplicity distribution $\frac{1}{\lambda} \frac{dN}{dp_T d\lambda}$ on a logarithmic scale, ranging from 10^{-5} to 10^{-1} . The x-axis represents the multiplicity p_T on a logarithmic scale, ranging from 0 to 150. The data points are shown for CMS (black squares) and several Monte Carlo models: Epos 1.99.crmc.1.6.0 lhc (red line with crosses), Herwig 7.2.1 default (green dashed line with squares), Pythia 6.428 370 (red line with triangles), Pythia 8.315 default (blue line with triangles), and Sherpa 2.2.9 default (red dotted line with diamonds). The distribution peaks around $p_T \approx 20$ and then decreases.

Bottom Panel: The y-axis represents the ratio of the distribution to the CMS data, ranging from 0.5 to 2. The x-axis represents the multiplicity p_T on a linear scale, ranging from 0 to 150. The data points are shown for the same Monte Carlo models as in the top panel. The ratio is generally close to 1, indicating good agreement with the CMS data. The background is shaded in green and yellow.

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

Text: (CMS_2021_I1920187)