

The figure displays two panels related to the dijet invariant mass distribution for AK4 jets in the central region ($254 < p_T^{\text{jets}} < 326$ GeV) at CMS, 13 TeV.

Top Panel: Shows the differential cross-section $\frac{1}{\sigma} \frac{dN}{dp_T} \frac{d\lambda}{d\lambda}$ on a logarithmic scale (Y-axis, ranging from 10^{-3} to 10^2) versus the width of the invariant mass bin (X-axis, ranging from 0 to 1). The data points are shown for CMS (black squares) and compared with Herwig++ 2.7.1 default (orange dashed line with open circles) and Herwig 7.2.1 default (green dashed line with open squares). The distribution decreases as the width increases.

Bottom Panel: Shows the ratio of the cross-section to the CMS data, Ratio to CMS , on a linear scale (Y-axis, ranging from 0.5 to 2) versus the width of the invariant mass bin (X-axis, ranging from 0 to 1). The ratio is plotted for the same three data series. The ratio is generally close to 1, indicating good agreement with the CMS data. Shaded regions (yellow and green) represent the uncertainty bands for the Herwig++ and Herwig 7.2.1 models, respectively.

Text in the top panel: CMS, 13 TeV, AK4 jets, central dijet region, $254 < p_T^{\text{jets}} < 326$ GeV

Text in the bottom panel: (CMS_2021_I1920187)

Y-axis labels: $\frac{1}{\sigma} \frac{dN}{dp_T} \frac{d\lambda}{d\lambda}$ (top panel), Ratio to CMS (bottom panel)

X-axis label: width

Legend:

- CMS
- Herwig++ 2.7.1 default
- Herwig 7.2.1 default

(CMS_2021_I1920187)

mcplots.cern.ch [arXiv:2401.10621] Rivet 4.1.0, ≥ 100 k events

2

1

0.5

width