

The figure consists of two panels sharing a common x-axis labeled "groomed LHA" ranging from 0 to 1.

Top Panel: The y-axis is labeled $\frac{1}{dN/dp_T} \frac{dN}{dp_T} \frac{d\lambda}{d\lambda}$ and ranges from 10^{-2} to 10^1 on a logarithmic scale. The plot shows the distribution of groomed LHA for CMS data (black squares) and five Pythia models: Pythia 6.428 345 (red dashed line with open circles), Pythia 6.428 346 (yellow dotted line with open squares), Pythia 6.428 370 (red solid line with open triangles), Pythia 6.428 default (orange dash-dotted line with open squares), and Pythia 8.244 default (blue solid line with solid triangles). The distributions peak around a groomed LHA of 0.2 and then decrease. The CMS data is shown as a solid black line with error bars.

Bottom Panel: The y-axis is labeled "Ratio to CMS" and ranges from 0.5 to 2.0 on a logarithmic scale. This panel shows the ratio of the groomed LHA distribution for each Pythia model to the CMS data. The ratios are generally close to 1.0, indicating good agreement with the CMS data. The ratios for Pythia 6.428 345 and 6.428 346 are slightly higher than 1.0, while the ratios for Pythia 6.428 370 and 6.428 default are slightly lower. The ratio for Pythia 8.244 default is very close to 1.0. The plot also includes a green shaded band around the ratio of 1.0, representing the uncertainty of the CMS data.

Legend:

- CMS
- Pythia 6.428 345
- ...□ Pythia 6.428 346
- △ Pythia 6.428 370
- - - □ Pythia 6.428 default
- ▲ Pythia 8.244 default

Text: The top panel is labeled "CMS, 13 TeV, AK8 jets, central dijet region, $150 < p_T^{\text{jet}} < 186 \text{ GeV}$ ". The bottom panel is labeled "(CMS_2021_I1920187)".

(CMS_2021_I1920187)

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

groomed LHA