

The figure displays two panels related to dijet production in the forward region at CMS, 13 TeV, using AK4 jets.

**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  $10^{-2}$  to  $10^2$ ) versus  $p_{TD2}$  (charged-only) on a linear scale (x-axis, ranging from 0 to 1). The data points are from CMS (black squares) and several Pythia 8.315 models: default (blue triangles), tune-AU2 (red inverted triangles), tune-AU2lox (red diamonds), tune-AU2lox (orange squares), and tune-AU2m (brown stars). The models generally follow the CMS data, peaking around  $p_{TD2} \approx 0.1$  and then decreasing.

**Bottom Panel:** Shows the ratio of the models to the CMS data on a linear scale (y-axis, ranging from 0.5 to 2.5) versus  $p_{TD2}$  (charged-only) on a linear scale (x-axis, ranging from 0 to 1). The ratio is plotted for the same models as the top panel. The ratio is generally close to 1, indicating good agreement with the CMS data. Shaded regions (yellow and green) indicate the uncertainty bands for the ratio.

**Legend:**

- CMS
- ▲ Pythia 8.315 default
- ▼ Pythia 8.315 tune-AU2
- ◆ Pythia 8.315 tune-AU2lox
- Pythia 8.315 tune-AU2lox
- ★ Pythia 8.315 tune-AU2m

**Text:** CMS, 13 TeV, AK4 jets, forward dijet region,  $408 < p_T^{jet} < 481$  GeV

(CMS\_2021\_I1920187)

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

pTD2 (charged-only)