

Z+Jet

The figure consists of two panels sharing a common x-axis labeled p_{TD2} ranging from 0 to 1.

Top Panel: The y-axis is the differential cross-section $\frac{1}{\#} \frac{dN}{dp_T} \frac{d\lambda}{dp_T}$ on a logarithmic scale from 10^{-1} to 10^2 . The plot shows data from CMS (black squares) and two Pythia models: Pythia 6.426 default (orange dashed line with squares) and Pythia 8.315 default (blue solid line with triangles). The CMS data points are at $p_{TD2} \approx 0.05, 0.1, 0.15, 0.25, 0.65$. The Pythia models follow the general trend of the data, peaking around $p_{TD2} \approx 0.1$ and then decreasing. A text label at the top right specifies the region: "CMS, 13 TeV, AK8 jets, Z+jet region, $65 < p_{T}^{\{jet\}} < 88$ GeV".

Bottom Panel: The y-axis is the "Ratio to CMS" on a linear scale from 0.5 to 2.0. It shows the ratio of the Pythia models to the CMS data. The Pythia 6.426 default model (orange dashed line with squares) starts at a ratio of approximately 0.7 at $p_{TD2} \approx 0.05$ and increases to about 1.4 at $p_{TD2} \approx 0.65$. The Pythia 8.315 default model (blue solid line with triangles) starts at a ratio of approximately 0.9 at $p_{TD2} \approx 0.05$ and increases to about 1.3 at $p_{TD2} \approx 0.65$. Shaded regions in yellow and green represent the uncertainty bands for the ratio. A horizontal line at a ratio of 1.0 indicates perfect agreement with CMS data. A text label "(CMS_2021_I1920187)" is present in the bottom panel.

Source information on the right side of the plot: "mcplots.cern.ch [arXiv:2401.10621]" and "Rivet 4.1.0, $\geq 100k$ events".

(CMS_2021_I1920187)

Rivet 4.1.0, $\geq 100\text{k}$ events

mcplots.cern.ch [arXiv:2401.10621]

2

1

0.5

pTD2