

## Jets

The figure displays the distribution of  $p_{TD2}$  (charged-only) for CMS data and various Pythia models. The top panel shows the distribution in units of  $1/m \frac{dN}{d\ln p_T d\ln \lambda}$ , with a peak around 0.15. The bottom panel shows the ratio of the models to the CMS data, with a horizontal line at 1.0. The x-axis for both panels is  $p_{TD2}$  (charged-only) ranging from 0 to 1.0.

**Top Panel: Distribution of  $p_{TD2}$  (charged-only)**

The top panel shows the distribution of  $p_{TD2}$  (charged-only) for CMS data and various Pythia models. The x-axis is  $p_{TD2}$  (charged-only) ranging from 0 to 1.0. The y-axis is  $1/m \frac{dN}{d\ln p_T d\ln \lambda}$  ranging from 0 to 10000. The legend indicates:

- CMS (Black squares)
- Pythia 6.428 370 (Red line with open triangles)
- Pythia 6.428 default (Orange dashed line with open squares)
- Pythia 8.308 default (Blue solid line with filled triangles)

The CMS data shows a sharp peak around 0.15. The Pythia models show a broader distribution with a peak around 0.15. The Pythia 8.308 default model shows the highest peak, while the Pythia 6.428 370 model shows the lowest peak.

**Bottom Panel: Ratio to CMS**

The bottom panel shows the ratio of the models to the CMS data. The x-axis is  $p_{TD2}$  (charged-only) ranging from 0 to 1.0. The y-axis is the Ratio to CMS, ranging from 0.5 to 2.0. The ratio is shown as a stacked histogram with yellow and green bars. A horizontal line at 1.0 indicates the ratio of the models to the CMS data.

Rivet 3.1.10,  $\geq 2.4\text{M}$  events

2

0.5

pTD2 (charged-only)