

Z+Jet

Rivet 3.1.10, $\geq 2.2\text{M}$ events

mcplots.cern.ch [arXiv:1306.3436]

2

0.5

pTD2

 $\mathbf{d}^N$

Ratio to CMS

Figure 1 consists of two panels. The top panel is a plot of the distribution of the ratio of the number of particles in the jet to the number of particles in the event, $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure). The x-axis is labeled $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure) and ranges from 0 to 1. The y-axis is labeled $\frac{1}{N} \frac{dN}{d(p_T^D)^2 \lambda_0^2}$ and ranges from 0 to 1000. The plot shows four data series: CMS (black squares), Herwig++ 2.7.1 default (orange dashed line with open circles), Herwig++ 2.7.1 UE-EE-5 (red solid line with open circles), and Herwig 7.2.1 default (green dashed line with open squares). The CMS data points are clustered at low values of $(p_T^D)^2 \lambda_0^2$ (below 0.2). The Herwig++ 2.7.1 UE-EE-5 model shows a peak around 0.15, while the other models show a peak around 0.2. The bottom panel is a plot of the ratio of the number of particles in the jet to the number of particles in the event, $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure). The x-axis is labeled $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure) and ranges from 0 to 1. The y-axis is labeled 'Ratio to CMS' and ranges from 0.5 to 2. The plot shows a yellow shaded region representing the ratio of the number of particles in the jet to the number of particles in the event, $(p_T^D)^2 \lambda_0^2$ (CMS jet substructure). The ratio is mostly between 0.8 and 1.2, with a slight increase for values above 0.3.