

Jets

Figure 1 consists of two panels. The top panel is a plot of the distribution of the width of the first jet substructure, λ_1^1 , in units of the transverse momentum of the first jet, p_T^1 . The x-axis is labeled 'width' and ranges from 0 to 1. The y-axis is labeled $\frac{dN}{d\ln \text{width}}$ and ranges from 0 to 10000. The plot shows three data series: CMS (black solid line with squares), Herwig++ 2.6.1a default (orange dashed line with circles), and Herwig 7.2.1 default (green dashed line with squares). The Herwig++ 2.6.1a default model shows a peak around width 0.15, while the Herwig 7.2.1 default model shows a peak around width 0.2. The CMS result is a flat distribution around width 0.5. The bottom panel is a plot of the ratio of the width of the first jet substructure to the CMS result, $\frac{\lambda_1^1}{\lambda_1^1(\text{CMS})}$. The x-axis is labeled 'width' 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 green shaded band around 1.0, with a yellow shaded band indicating the uncertainty. The ratio is generally close to 1.0, with some fluctuations.

Rivet 3.1.10, $\geq 400\text{k}$ events

mcplots.cern.ch [arXiv:1306.3436]

2

1

0.5

width