

Z+Jet

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 , 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 "dN/dln width" and ranges from 0 to 1000. The plot compares CMS data (black squares) with three Herwig++ models: Herwig++ 2.7.1 default (orange dashed line with circles), Herwig++ 2.7.1 UE-EE-5 (red solid line with circles), and Herwig 7.2.1 default (green dashed line with squares). The CMS data shows a sharp peak at $\lambda_1 \approx 0.1$. The Herwig++ 2.7.1 default model shows a broader peak at $\lambda_1 \approx 0.1$. The Herwig++ 2.7.1 UE-EE-5 model shows a peak at $\lambda_1 \approx 0.1$ that is closer to the CMS data. The Herwig 7.2.1 default model shows a peak at $\lambda_1 \approx 0.1$ that is broader than the CMS data. The bottom panel is a plot of the ratio of the width of the first jet substructure to the width of the first jet substructure in the CMS data, as a function of the width of the first jet substructure. 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 the ratio for the Herwig++ 2.7.1 default (orange) and Herwig++ 2.7.1 UE-EE-5 (red) models. The ratio is generally close to 1, indicating good agreement with the CMS data.

Rivet 3.1.10, $\geq 2.3\text{M}$ events

mcplots.cern.ch [arXiv:1306.3436]

2

0.5

width