

Z+Jet

Rivet 3.1.10, 2.7M events

mcplots.cern.ch [arXiv:1306.3436]

2

0.5

width

Figure 1 consists of two panels. The top panel, titled "Width λ_1^1 (CMS jet substructure)", shows 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 $\frac{dN}{d\ln(\lambda_1^1)}$ and ranges from 0 to 1000. The plot compares the CMS data (black squares) with the Pythia 8.308 default model (blue line with triangles). The Pythia 8.308 default model shows a sharp peak at width ≈ 0.15 , while the CMS data shows a much lower, broader distribution. The bottom panel shows the ratio of the Pythia 8.308 default model to the CMS model for 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 a green band indicating the ratio is between 0.5 and 1.5, and a yellow band indicating the ratio is between 1.5 and 2.0. The ratio is generally higher for width > 0.5 .