

Gap fraction

Gap fraction vs Δy (LJ) ($180 < p_T < 210$)

- ATLAS
- - □ Herwig 7.0.1 default
- - ▲ Pythia 8.170 default
- - ◆ Sherpa 1.4.3 default

2

1.5

1

0.5

0

ATLAS_2011_S9126244

Rivet 3.1.0, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

Ratio to ATLAS

2

1

0.5

2

1

0.5

0

2

4

6

$|\Delta y|$

The figure consists of two vertically stacked panels sharing a common x-axis representing the rapidity difference $|\Delta y|$ from 0 to 6. The top panel displays the gap fraction, with the y-axis ranging from 0 to 2. It compares ATLAS experimental data (black squares) with three Monte Carlo models: Herwig 7.0.1 (green dashed line with open squares), Pythia 8.170 (blue solid line with solid triangles), and Sherpa 1.4.3 (red dotted line with solid diamonds). All models show a general decrease in gap fraction as $|\Delta y|$ increases. The bottom panel shows the ratio of each model to the ATLAS data, with the y-axis ranging from 0.5 to 2. A horizontal line is drawn at a ratio of 1.0. The background of the bottom panel is a 2D histogram showing the distribution of ratios, with green and yellow colors indicating the density of events. The ATLAS data points are also plotted in the bottom panel for reference.