

Gap fraction

Gap fraction vs Δy (FB) ($210 < p_T < 240$ ($Q_0 = \bar{p}_T$))

- ATLAS
- - □ Herwig 7.1.1 default
- - ▲ Pythia 8.170 default
- - ◆ Sherpa 1.4.0 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

0.5

0 2 4 6

$|\Delta y|$

The figure consists of two vertically stacked panels sharing a common x-axis representing the absolute rapidity difference $|\Delta y|$ from 0 to 6. The top panel shows the 'Gap fraction' on the y-axis, ranging from 0 to 2. The bottom panel shows the 'Ratio to ATLAS' on the y-axis, also ranging from 0 to 2. A horizontal line is drawn at a ratio of 1.0 in the bottom panel. Data points with error bars are shown for ATLAS (black squares), Herwig 7.1.1 (green dashed line with open squares), Pythia 8.170 (blue solid line with solid triangles), and Sherpa 1.4.0 (red dotted line with solid diamonds). The ATLAS data points are located at $|\Delta y| \approx 0.3, 0.7, 1.1, 1.7, 2.2, 2.7, 3.2, 3.7, 4.2, 4.7, 5.2, 5.7$. The Monte Carlo models show a general decreasing trend in gap fraction as $|\Delta y|$ increases, with Herwig 7.1.1 showing a significant dip around $|\Delta y| = 3.7$. The bottom panel includes a shaded region in yellow and green, likely representing a confidence interval or uncertainty band for the ratio to ATLAS.