

Gap fraction

Gap fraction vs Δy (FB) ($240 < p_T < 270$)

- ATLAS
- - □ Herwig 7.1.1 default
- - ▲ Pythia 8.301 default
- - ◆ Sherpa 2.1.1 default

2

1.5

1

0.5

0

Rivet 3.1.0, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS_2011_S9126244

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 absolute rapidity difference $|\Delta y|$ from 0 to 6. The top panel shows the 'Gap fraction' on the y-axis (0 to 2), with data points and error bars for ATLAS (black squares), Herwig 7.1.1 (green dashed line with squares), Pythia 8.301 (blue solid line with triangles), and Sherpa 2.1.1 (red dotted line with diamonds). The gap fraction decreases from approximately 0.9 at $|\Delta y| = 0.5$ to about 0.15 at $|\Delta y| = 5.5$. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2), with shaded regions representing the uncertainty bands for Herwig (green) and Pythia (yellow) models. The ratio is generally close to 1.0, with some fluctuations, particularly a peak for Pythia around $|\Delta y| = 4.5$.