

Gap fraction

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

- ATLAS
- Herwig 7.2.0 default
- ▲ Pythia 8.212 default
- ◆ Sherpa 1.2.2p 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 (0 to 2). It displays ATLAS data points (black squares) and three Monte Carlo model predictions: Herwig 7.2.0 (green dashed line with squares), Pythia 8.212 (blue solid line with triangles), and Sherpa 1.2.2p (red dotted line with diamonds). All models show a decreasing trend in gap fraction as $|\Delta y|$ increases, starting near 1.0 at $|\Delta y| \approx 0.5$ and reaching approximately 0.3-0.4 at $|\Delta y| \approx 4.5$. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2). It uses the same data and model series as the top panel. A horizontal line is drawn at a ratio of 1.0. The Herwig and Pythia models are generally close to the ATLAS data, while the Sherpa model tends to be higher at larger $|\Delta y|$. Shaded regions in yellow and green are present in the bottom panel, likely representing uncertainty bands or specific model regions.