

Gap fraction

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

- ATLAS
- Herwig 7.2.0 default
- ▲ Pythia 8.235 default
- ◆ Sherpa 2.1.0 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

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 shows the 'Gap fraction' on the y-axis (0 to 2), with ATLAS data points (black squares) and three Monte Carlo (MC) model predictions: Herwig 7.2.0 (green dashed line with open squares), Pythia 8.235 (blue solid line with solid triangles), and Sherpa 2.1.0 (red dotted line with solid diamonds). All series show a general downward trend as $|\Delta y|$ increases. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2), with shaded regions representing the uncertainty bands for the Herwig (green) and Pythia (yellow) models. The Sherpa model is also plotted as a dotted line with diamonds. A horizontal line is drawn at a ratio of 1.0. The ATLAS data points are also visible in the bottom panel, showing the ratio of the measured gap fraction to the ATLAS prediction.