

Gap fraction

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

- ATLAS
- Herwig 7.2.0 default
- ▲ Pythia 8.180 default
- ◆ Sherpa 1.4.2 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, ranging from 0 to 2. It displays ATLAS experimental data (black squares) and three Monte Carlo model predictions: Herwig 7.2.0 (green dashed line with squares), Pythia 8.180 (blue solid line with triangles), and Sherpa 1.4.2 (red dotted line with diamonds). All models show a general decrease in gap fraction as $|\Delta y|$ increases, with some fluctuations. The bottom panel shows the 'Ratio to ATLAS' on the y-axis, ranging from 0.5 to 2. It uses the same data points as the top panel. A horizontal line is drawn at a ratio of 1.0. Shaded regions in yellow and green are overlaid on the plot, representing uncertainty bands or systematic variations. The text 'ATLAS_2011_S9126244' is located in the middle of the top panel.

$ \Delta y $	ATLAS (Gap Fraction)	Herwig 7.2.0 (Gap Fraction)	Pythia 8.180 (Gap Fraction)	Sherpa 1.4.2 (Gap Fraction)
0.3	0.95	0.95	0.95	0.95
0.8	0.80	0.80	0.80	0.80
1.3	0.65	0.65	0.65	0.60
1.8	0.55	0.55	0.50	0.50
2.3	0.45	0.45	0.45	0.45
2.8	0.35	0.35	0.35	0.30
3.3	0.30	0.30	0.25	0.25
3.8	0.30	0.30	0.45	0.45
4.3	0.35	0.20	0.20	0.35
4.8	0.35	-	0.50	-