

Gap fraction

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

- ATLAS
- - □ Herwig 7.2.0 default
- · · ◆ Sherpa 2.2.8 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 features three data series: ATLAS experimental data (black squares), Herwig 7.2.0 default (green dashed line with open squares), and Sherpa 2.2.8 default (red dotted line with red diamonds). All series show a general downward trend from $|\Delta y| \approx 0.5$ to $|\Delta y| \approx 4.5$, with a notable spike at $|\Delta y| \approx 4.8$. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2). It displays the same three data series as the top panel, overlaid with shaded regions: a green shaded area for Herwig and a yellow shaded area for Sherpa. A horizontal line is drawn at a ratio of 1.0. The shaded regions indicate the spread of the model predictions relative to the ATLAS data points.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Sherpa 2.2.8 Gap Fraction	Herwig Ratio to ATLAS	Sherpa Ratio to ATLAS
0.5	~0.95	~0.95	~0.95	~1.0	~1.0
1.0	~0.8	~0.8	~0.8	~1.0	~1.0
1.5	~0.65	~0.65	~0.6	~1.0	~0.9
2.0	~0.55	~0.55	~0.5	~1.0	~0.9
2.5	~0.45	~0.45	~0.4	~1.0	~0.85
3.0	~0.4	~0.4	~0.35	~0.95	~0.85
3.5	~0.35	~0.35	~0.3	~0.9	~0.8
4.0	~0.3	~0.3	~0.25	~0.9	~0.65
4.5	~0.25	~0.25	~0.2	~0.55	~0.55
4.8	~0.35	~0.35	~0.5	~1.5	~1.5
5.8	~0.0	-	-	-	-