

Gap fraction

Gap fraction vs Δy (FB) ($210 < p_T < 240$ ($Q_0 = \bar{p}_T$))

- ATLAS
- - □ Herwig 7.2.0 default
- - ◆ Sherpa 1.3.0 default

2.5

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

$|\Delta y|$

0

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 2.5). It features three data series: ATLAS (black squares), Herwig 7.2.0 default (green dashed line with open squares), and Sherpa 1.3.0 default (red dotted line with filled diamonds). All series show a general downward trend as $|\Delta y|$ increases, with ATLAS data points showing significant scatter and a sharp drop to zero at $|\Delta y| \approx 5.8$. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2.0). It uses the same color scheme for the data series. A horizontal line is drawn at a ratio of 1.0. A 2D histogram in the background of the bottom panel shows the distribution of the ratio, with green and yellow colors indicating the density of points. The histogram shows a concentration of points around a ratio of 1.0 for $|\Delta y| < 4$, and a shift towards higher ratios for larger $|\Delta y|$.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Sherpa 1.3.0 Gap Fraction	Ratio to ATLAS
0.4	1.0	1.0	1.0	1.0
0.8	0.95	1.0	0.95	1.0
1.2	0.95	0.95	0.95	1.0
1.6	0.95	0.95	0.95	1.0
2.2	0.9	0.85	1.0	1.1
2.8	0.85	0.85	0.85	1.0
3.2	0.8	0.75	0.9	1.1
3.6	0.8	0.6	0.85	1.1
4.2	0.65	0.65	0.65	1.0
4.8	0.45	0.4	0.8	1.8
5.2	0.3	-	1.0	-
5.8	0.0	-	-	-