

Gap fraction

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

- ATLAS
- - □ Herwig 7.2.0 default
- - ◆ Sherpa 1.4.5 default

2

1.5

1

0.5

0

Rivet 3.1.0, $\geq 100k$ events

mcplots.cern.ch [arXiv:1306.3436]

ATLAS_2011_S9126244

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 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 (black squares), Herwig 7.2.0 default (green dashed line with open squares), and Sherpa 1.4.5 default (red dotted line with filled diamonds). All series show a decreasing trend as $|\Delta y|$ increases. The bottom panel shows the 'Ratio to ATLAS' on the y-axis (0.5 to 2). It displays the same three series, with the Herwig and Sherpa models generally staying near a ratio of 1.0, while the ATLAS data points show a significant increase in ratio for $|\Delta y| > 4$. A horizontal line is drawn at a ratio of 1.0. A 2D histogram in the bottom right of the ratio panel shows the distribution of the ratio to ATLAS, with yellow and green colors indicating different density regions.

$ \Delta y $	ATLAS (Gap fraction)	Herwig 7.2.0 (Gap fraction)	Sherpa 1.4.5 (Gap fraction)
0.4	1.0	1.0	1.0
0.8	0.98	0.98	0.98
1.2	0.95	0.95	0.95
1.6	0.92	0.92	0.92
2.0	0.9	0.85	0.9
2.4	0.88	0.85	0.88
2.8	0.82	0.75	0.82
3.2	0.78	0.68	0.78
3.6	0.78	0.62	0.78
4.0	0.7	0.68	0.75
4.4	0.45	0.42	0.68
4.8	0.32	-	-
5.2	0.0	-	-