

Gap fraction

Gap fraction vs  $\Delta y$  (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

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 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 1.4.5 default (red dotted line with filled 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). It uses the same three data series, with the ATLAS data points being a constant horizontal line at 1.0. The Herwig and Sherpa models are shown as shaded regions (green and yellow respectively) that fluctuate around the 1.0 ratio line. A horizontal line is drawn at Ratio to ATLAS = 1.0. The text 'ATLAS\_2011\_S9126244' is centered in the top panel, and 'Rivet 3.1.0,  $\geq 100k$  events' and 'mcplots.cern.ch [arXiv:1306.3436]' are on the right side.

$ \Delta y $	ATLAS Gap Fraction	Herwig 7.2.0 Gap Fraction	Sherpa 1.4.5 Gap Fraction	Ratio to ATLAS (Herwig)	Ratio to ATLAS (Sherpa)
0.5	1.0	1.0	1.0	1.0	1.0
1.0	0.98	0.98	0.98	1.0	1.0
1.5	0.95	0.95	0.95	1.0	1.0
2.0	0.92	0.85	0.92	0.9	1.0
2.5	0.88	0.88	0.88	1.0	1.0
3.0	0.82	0.75	0.82	0.9	1.0
3.5	0.80	0.62	0.80	0.8	1.0
4.0	0.70	0.68	0.75	1.0	1.1
4.5	0.48	0.42	0.68	0.9	1.5
5.0	0.35	-	-	-	-
5.5	0.0	-	-	-	-